



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
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1N REPLY REFER TO:

OPNAVINST 4790.15D CH-2
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OPNAV INSTRUCTION 4790.15D CHANGE TRANSMITTAL 2

From: Chief of Naval Operations

Subj: AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT MAINTENANCE
PROGRAM (ALREMP)

Encl: (1) Revised cover, pages i, ii, iii, iv, v, vi, vii, 1-1, 1-2, 4-1 through 4-13, 5-1, 5-2, 5-3, 5-5, 5-6, 5-7, 5-9, 5-11, 5-12, 5-17, 6-3, 6-4, 7-1, 7-5 through 7-9, 9-9 through 9-15, 9-26, 11-1 through 11-65, 12-5, 12-6, 12-7, A-2 through A-9, E-6, E-7, F-1 through F-3, I-5, I-6 and I-7.

(2) New Appendix G, ALRE Tool Control Program, pages G-i through G-53.

1. Purpose. To incorporate corrections and provide Appendix G, ALRE Tool Control Plan.

2. Action.

a. Remove cover and pages i, ii, iii, iv, v, vi, vii, 1-1, 1-2, 4-1 through 4-13, 5-1, 5-2, 5-3, 5-5, 5-6, 5-7, 5-9, 5-11, 5-12, 5-17, 6-3, 6-4, 7-1, 7-5 through 7-9, 9-9 through 9-15, 9-26, 11-1 through 11-65, 12-5, 12-6, 12-7, A-2 through A-9, E-6, E-7, F-1 through F-3, I-5, I-6, I-7 and replace with enclosure (1) of this change transmittal.

b. Add new enclosure (2) after Appendix F.

3. Cancellation. This transmittal is canceled after appropriate action has been completed.

R. B. WREN
CAPT U.S. NAVY

Distribution:
(Same as basic)

OPNAV 4790.15D
01 MARCH 2001 with
CH-1 26 JUNE 2002 and
CH-2 21 APRIL 2005
Incorporated

THE AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT MAINTENANCE PROGRAM (ALREMP)

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C.

OPNAVINST 4790.15D CH-2 ALREMP Change Highlights

OPNAVINST 4790.15D Change 2 to the Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP) (OPNAVINST 4790.15D CH-2) replaces OPNAVINST 4790.15D Change 1 dated 26 June 2002 and includes the following:

General

1. Includes corrections to OPNAVINST 4790.15D CH-1 of update Reference instructions.
2. Adds Flight Safe Program to Chapter 7 - Special Programs.
3. Changes ALRE Discrepancy Reporting in Chapter 11 - Quality Assurance, via NAMDRP Website vice NAVAIR Clearinghouse Website and the addition of Appendix G - ALRE Tool Control Program.

Chapter 1: Introduction and Guide for Using the Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP)

1. Changes address for Commander, Naval Air Systems Command.

Chapter 2: Objective, Policy, and Responsibility for the ALREMP

1. No changes.

Chapter 3: Maintenance Concepts, Levels, and Types

1. No changes.

Chapter 4: Organization for Aircraft Launch and Recovery Equipment

1. Changes Naval Air Maintenance Training Group (NAMTRAGRUDET) to Center For Naval Aviation Technical Training (CNATTU) on Page 4-10, Figure 4-2.

Chapter 5: Training

1. Changes references of Maintenance Training Requirements Review (MTRR) to Human Performance Requirements Review (HPRR).
2. Changes Paragraph 5.7.5 requiring V-2 Division Officers to review and initial at least monthly all required reading boards.
3. Changes Naval Air Maintenance Training Group (NAMTRAGRUDET) to Center For Naval Aviation Technical Training (CNATTU) on Page 5-17, Figure 5-1.

Chapter 6: ALRE Maintenance Management Teams

1. Changes Paragraph 6.4.1 Scheduling to read as: ALRE Maintenance Management Team visits will be scheduled by the TYCOM on a routine basis, with each ship visited at least once during the work-up cycle and/or during shipyard availabilities. Formal audit "shall" be conducted for fleet carriers prior to deployment and to ALRE Shore activities annually. The ALRE Management Team may come aboard for unscheduled assist at the TYCOMs discretion or may be

requested by the activity via naval letter or message whenever the command feels it is necessary.

Chapter 7: Special Programs

1. Adds Flight Safe Program to Chapter 7 - Special Programs, Page 7-5, Paragraph 7.8.

Chapter 8: Maintenance Organization and Responsibilities

1. No changes.

Chapter 9: Maintenance Control

1. Changes Paragraph 9.10.1 to read as: Safety of operations is paramount. In those situations where extraordinary actions are required to either protect life and equipment or to accomplish the mission, routine documentation procedures may be waived until normal operations can be resumed. Documentation of all maintenance actions shall immediately follow the action in such cases; however, the proper quality assurance verification and surveillance must be maintained. The following guidelines will be adhered to:

2. Changes Paragraph 9.10.1 a. to read as: "In cases where immediate maintenance action is necessary, where time is extremely critical to preclude certain or likely death/injury to personnel or loss/damage to equipment, emergency deviation from routine MAF flow/work documentation is justified and may be authorized. (See figure 9-9.)"

3. Changes Paragraph 9.10.1 b. to read as: If the ALRE maintenance officer/maintenance supervisor or higher authority has approved emergency deviation, only the MAF documentation procedure is modified. All maintenance procedures remain as previously described. The MAF shall be initiated immediately after the job is complete, provided the ALRE maintenance officer/maintenance supervisor and QA have ensured that all maintenance actions were satisfactorily completed by personally witnessing events. This is the only time equipment can go from DOWN to UP status without an ALRE maintenance officer/maintenance control supervisor signature on a MAF.

Chapter 10: Material Control

1. No changes.

Chapter 11: Quality Assurance

1. Revised entirely for inclusion of NAMDRP Discrepancy Reporting Website.

Chapter 12: ALRE Maintenance Support

1. Changes pages 12-5 through 12-7 to reflect inclusion of Appendix G - ALRE Tool Control Program .

Chapter 13: ALRE Maintenance Organizations and Responsibilities

1. No changes.

Appendix A: Acronyms and Abbreviations

1. Contains general update.

Appendix B: Instructions for Completing OPNAV 4790/160

1. No changes.

Appendix C: ALRE Malfunction and Corrosion Control Codes

1. No Changes.

Appendix D: Forms and Reports

1. Contains general update.

Appendix E: Sample ALREMP Forms

1. Page E-6, Figure E-5, Removed Clock Times (Decreasing CSV) Table.

Appendix F: ALRE Technical Manuals

1. Contains general updates.

Appendix G: ALRE Tool Control Program

1. Added requirements of ALRE Tool Control Program.

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Chapter 1

Introduction and Guide for Using the Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP) Instruction

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Chapter 1

Introduction and Guide for Using the Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP) Instruction

Introduction

1.1.1 The ALREMP is sponsored and directed by the Chief of Naval Operations (CNO). This instruction addresses the concepts, objectives, policies, programs, organizations, and responsibilities of the ALREMP.

How to Obtain Copies

1.1.1 To receive revisions and changes to this instruction automatically, a unit must be on the automatic distribution list maintained by CNO. To be included on the list or to change distribution requirements, submit a letter, with justification to:

Commander, Naval Air Systems Command
Aircraft Launch and Recovery Equipment, Code PMA251F
Bldg. 2272 Suite 348
47123 Buse Rd. Unit IPT
Patuxent River, MD 20670-1547

1.2.2 Individual copies of this instruction for information or training purposes may be requested by letter to:

Commander, Naval Air Systems Command
Aircraft Launch and Recovery Equipment, Code PMA251F
Bldg. 2272 Suite 348
47123 Buse Rd. Unit IPT
Patuxent River, MD 20670-1547

Guide for Using the ALREMP

1.3.1 This instruction is divided into 13 chapters.

1.3.2 Each chapter reflects segments of the maintenance organization.

1.3.3 Each paragraph is numbered with a decimal system. The first digit identifies the chapter, the second and subsequent decimals identify the paragraph and subparagraphs.

Chapter	1
Paragraph	1.1
Subparagraph	1.1.1
Subparagraph	1.1.1.1

**Chapter 4 - Organization for Aircraft Launch and Recovery Equipment
Maintenance**

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Chapter 4

Organization for Aircraft Launch and Recovery Equipment Maintenance

Command Structure

4.1.1 The Chief of Naval Operations (CNO) is responsible for the material condition, readiness and training of the operating forces of the Navy. The CNO carries out these responsibilities through the direction of the Naval Systems Commands, as well as the Fleet and Type Commanders, and their supporting subordinate commands and offices. In addition, the CNO commands such shore activities as assigned by the Secretary of the Navy (SECNAV).

4.1.2 CNO is responsible for the disciplined use of resources and the operating efficiency of all commands and activities under his/her command. Figure 4-1 shows the CNO command organization.

4.1.3 The Director, Air Warfare Division (N78), establishes policy, requirements, and priorities for carrier operations and maintenance. N78 is also responsible for programming the resources to support the Aircraft Launch and Recovery Equipment (ALRE) program.

4.1.4 The Director, Surface Warfare Division (N76), establishes policy, requirements, and priorities for surface ships maintenance and is responsible for programming resources for Shore Intermediate Maintenance Activities (SIMAs).

Command Relationships

4.2.1 Command relationships and the exercise of command responsibilities for Navy shore activities are in SECNAVINST 5400.14A and are not affected by this instruction.

4.2.2 Figure 4-2 is provided to illustrate the command relationships for ALRE maintenance.

Command Responsibilities

4.3.1 The aviation type commanders (TYCOMs) shall support the ALREMP by achieving CNO-directed readiness objectives and safety standards while optimizing total resource requirements. This responsibility includes repair of ALRE equipment at the most economical level of maintenance. It also includes the efficient use of data as a management tool to improve equipment material condition and safety. Program responsibilities include funding, manpower management, training and material management. Aviation TYCOMs are the logistics agents for aeronautical equipment in the Atlantic and Pacific Fleets and provide technical liaison with

surface type commanders, systems commanders and their shore activities, and fleet carriers. Aviation TYCOMs are responsible for ensuring sound ALRE maintenance procedures and practices. Their functions include approving technical availabilities analyzing malfunction reports, screening ship's work requests (OPNAV 4790/2K) for accomplishment by ship's force, intermediate and depot level maintenance activities, controlling NAVAIRSYSCOM service change material, and coordination of NAVAIRWARCENACDIV Lakehurst's Carrier and Field Service Units (CAFSUs) support.

4.3.2 Carrier group commanders (COMCARGRUs) are responsible for the overall functional and operational condition of ships under their cognizance with special emphasis on planning efforts prior to deployments. The commanding officer of a ship is ultimately responsible for the maintenance and material condition of the ship's ALRE.

4.3.3 Each fleet aircraft carrier (CV/CVN) is designated by OPNAVINST 4700.7J as an intermediate maintenance activity (IMA) comprised of the aircraft intermediate maintenance department (AIMD), and engineering, supply and weapons departments. AIMDs and the repair divisions of the engineering departments will provide appropriate ALRE intermediate maintenance support, where capability and capacity exist.

Support Responsibilities

4.4.1 The Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM) provides material in support of the operation and maintenance of aircraft launch and recovery equipment. Every effort is made to have material located when and where it is needed. The ALRE supply organization is shown in Figure 4-3.

4.4.1.1 NAVICP Philadelphia is the primary Navy inventory control point (ICP) responsible for ALRE material support of the ALREMP. ALRE material consists of spares and repair parts for catapults, arresting gear, visual landing aids (VLA), and support equipment (SE), common and peculiar. NAVICP Philadelphia's responsibilities include:

a. Computation of ALRE material requirements in both range and depth. This responsibility includes conducting and coordinating provisioning conferences and the identification and transfer of items to be managed by the Defense Logistics Agency (DLA) and other cognizant inventory control points (ICPs).

b. Budgeting for and funding of appropriate ALRE material requirements.

c. Procuring material directly from industry or via other government agencies.

d. Allocating NAVAIRSYSCOM-procured material to stock points, distribution of material to fill replenishment stock requirements, and referral of requisitions to stock points to meet requirements.

e. Directing the proper disposal of defective ALRE material when authorized by NAVAIRWARCENACDIV Lakehurst.

f. Maintaining ALRE spares and associated spare parts lists/ordering information. The catalog function includes obtaining National Stock Numbers (NSNs) from the Defense Logistics Service Center (DLSC).

g. Determining wholesale system supply asset repair/rework requirements of repairable components to be processed by naval or commercial repair/rework facilities.

h. Providing areas of interest data to NAVICP Mechanicsburg, to maintain allowances for ALRE material in support of the CV/CVN Coordinated Shipboard Allowance List (COSAL).

4.4.1.2 NAVICP Mechanicsburg is a field activity of NAVSUPSYSCOM located at Mechanicsburg, PA. NAVICP Mechanicsburg, is the ICP for Integrated Launch and Recovery Television Surveillance System (ILARTS) and catapult trough components; its ALRE responsibilities include those listed for NAVICP Philadelphia, in paragraph 4.4.1.1 and:

a. Maintaining the CV/CVN COSAL. The COSAL is a technical and supply management document designed to enable ships to achieve maximum operating capability for extended periods, independent of external logistic support.

4.4.2 The Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) is responsible for research, design, development, test, acquisition, and logistics support of all ALRE, associated material, and equipment. Figure 4-4 shows the COMNAVAIRSYSCOM organization as it pertains to ALRE.

4.4.2.1 As the technical manager for ALRE maintenance, COMNAVAIRSYSCOM:

a. Provides technical direction, guidance on procedures, and management review for each level of maintenance.

b. Provides ALRE maintenance procedural documents sufficient to clearly define the maintenance functions, organizations, and responsibilities to perform these functions.

c. Implements, manages, and maintains the ALREMP.

d. Assists CNO and others in developing training programs for officer and enlisted personnel assigned to ALRE maintenance.

e. Provides ALRE maintenance material allowance lists, together with lists of facilities that are authorized, available and required.

f. Makes recommendations concerning design of the ALRE Maintenance Data System (MDS) to reduce redundant, time consuming, and unnecessary reporting, and to ensure MDS is compatible for all three levels of maintenance as well as the ship's 3-M System.

4.4.2.2 COMNAVAIRSYSCOM provides ALRE technical direction as directed by CNO. A major portion of this effort is done using a centralized system for the issue and control of technical directives (TDs). Technical direction does not relieve commands from the responsibility of keeping seniors in the chain of command informed of material conditions affecting operational readiness. CNO, COMNAVAIRSYSCOM, and other interested commands must be kept fully informed if operational necessity precludes TD compliance within specified time limits. Any authority operating or having operational control over ALRE has full authority and responsibility to impose such additional operating restrictions as may be prudent. TYCOMs shall be concerned with technical direction matters. Requests for changes and amplification to technical direction shall be addressed to COMNAVAIRSYSCOM. When fleet operational requirements cannot be met as a result of limitations imposed by technical direction, recommendations shall be provided to CNO.

4.4.2.3 Program Management/NAVAIR Acquisition Executive (AIR-1.0), the Aircraft Launch and Recovery Equipment (ALRE) Program Office (PMA251) is responsible for providing the material acquisition and logistics support functional management for ALRE installed in ships, in aircraft, and ashore from inception through service life of the systems involved. Responsibilities include:

a. Certifying the safety and operability of ship's installed ALRE systems.

b. Coordinating the shipboard installation of all COMNAVAIRSYSCOM cognizant equipment in ships.

c. Developing the total aviation facilities requirements data package for integration into any Navy ship design.

d. Ensuring compatibility of ship and aircraft installed automatic carrier landing systems (ACLSs).

e. Representing AIR-4.0 on the Ship Acquisition and Improvement Panel of the CNO Executive Board.

f. Providing technical direction to the NAVAIRWARCENACDIV Lakehurst and its CAFSU organization and exercising technical cognizance of Naval Aviation Depot (NAVAVNDEPOT)/Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV) Voyage Repair Team (VRT) operations worldwide.

g. Acting as the COMNAVAIRSYSCOM ALREMP manager.

4.4.3 COMNAVAIRSYSCOM has command and support responsibility over the NAVAIRWARCENACDIV Lakehurst. This enables NAVAIRSYSCOM Headquarters to fulfill its role in matters pertaining to ALRE maintenance and material support for fleet readiness.

4.4.3.1 NAVAIRWARCENACDIV Lakehurst is the cognizant field activity (CFA) for aircraft launch and recovery equipment under COMNAVAIRSYSCOM. It is responsible for research, engineering, development, test and evaluation, systems integration, limited production, procurement, overhaul/repair, and in-service engineering of ALRE. It also provides technical and logistic support to all activities in support of installation, operation, overhaul, maintenance, repair and certification inspections of ALRE, and provides representatives to the Board of Inspection and Survey (INSURV). CAFSUs are the technical representatives of NAVAIRWARCENACDIV Lakehurst and coordinate support efforts between NAVAIRWARCENACDIV Lakehurst, fleet, and support activities. Figure 4-5 depicts the NAVAIRWARCENACDIV Lakehurst organization.

4.4.4 COMNAVAIRSYSCOM has command and support responsibility over the NAVAVNDEPOT/NAVAIRWARCENACDIV designated as ALRE Depot Maintenance Activities. These industrial establishments, through their VRTs, perform a complete range of repair operations on ALRE.

4.4.4.1 NAVAVNDEPOT/NAVAIRWARCENACDIV VRTs are small groups of shipyard trade specialists who are cross-trained and capable of functioning in two or more trades. VRT shall be overseen by a NAVAIRWARCENACDIV CAFSU Representative to ensure ALRE Maintenance standards established by NAVAIRWARCENACDIV Lakehurst are maintained. VRTs are established at the NAVAVNDEPOT in North Island, CA and at NAVAIRWARCENACDIV detachments in Norfolk, VA and Mayport, FL. VRT personnel perform designated depot level

tasks in direct support of NAVAIRSYSCOM shipboard and shore-based ALRE installations. Artisans are responsible for ensuring the proper quality assurance inspections of all work performed per established procedures.

4.4.5 Commander, Naval Sea Systems Command (COMNAVSEASYSKOM) has responsibility for ALRE equipment foundations, components of the catapults steam system prior to the launch valve, high pressure air for hydraulic systems, electrical power, stabilization inputs to VLA systems from the ship's stable element, and interior communications to all areas. NAVSEASYSKOM also prepares ship alterations to ALRE, as recommended by NAVAIRSYSCOM, authorizing the depot maintenance activities concerned to make approved alterations. Naval shipyards and NAVSEASYSKOM shore activities are primary designated overhaul points (DOPs) for ALRE. Figure 4-6 shows the NAVSEASYSKOM ALRE maintenance organization.

4.4.5.1 Naval Shipyards (NAVSHIPYDs). The NAVSHIPYDs, located at Bremerton (including San Diego detachment) and Norfolk, furnish depot level repair facilities and technical guidance for availabilities and overhaul periods. These activities perform major repairs, modifications and overhauls to ALRE and are responsible for the proper installation, alteration and test of this equipment under current drawings and directives.

4.4.5.2 Fleet Technical Support Centers (FTSCs) are shore activities of NAVSEASYSKOM. The FTSC, Atlantic is located at St. Julien's Creek Annex, Norfolk, VA and FTSC, Pacific is located in San Diego, CA. The FTSCs, using technical data received from NAVAIRWARCENACDIV Lakehurst, are responsible for maintaining ALRE Maintenance Requirement Cards (MRCs).

4.4.5.3 Supervisors of Shipbuilding, Conversion, and Repair, USN, (SUPSHIPS) are NAVSEASYSKOM shore activities which award and administer Navy and other Department of Defense shipbuilding, design, conversion, repair, and facility contracts at commercial shipyards. SUPSHIP responsibilities include approval of certain design plans, inspections, tests and certifications. The SUPSHIP office also functions as a procurement activity and administers the Commercial Industrial Services (CIS) program, integrates the requirements of several commands and manages the planning and engineering efforts for overhauls and availabilities.

4.4.5.4 The Naval Sea Logistics Center (NAVSEALOGCEN are a field activities of COMNAVSEASYSKOM and serves as the Maintenance Data System central data bank for the ship's 3-M system.

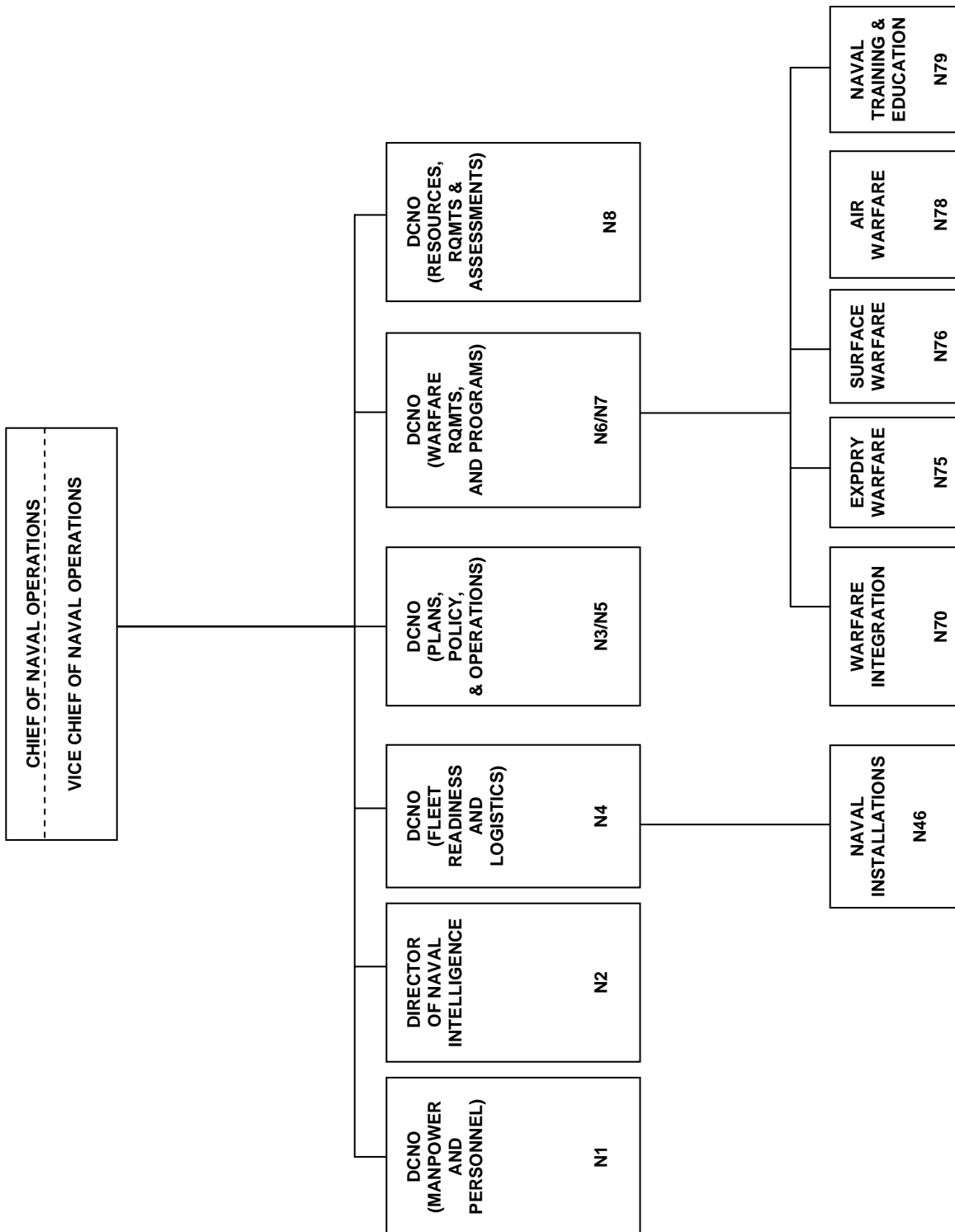


Figure 4-1. Office of the Chief of Naval Operations Organization

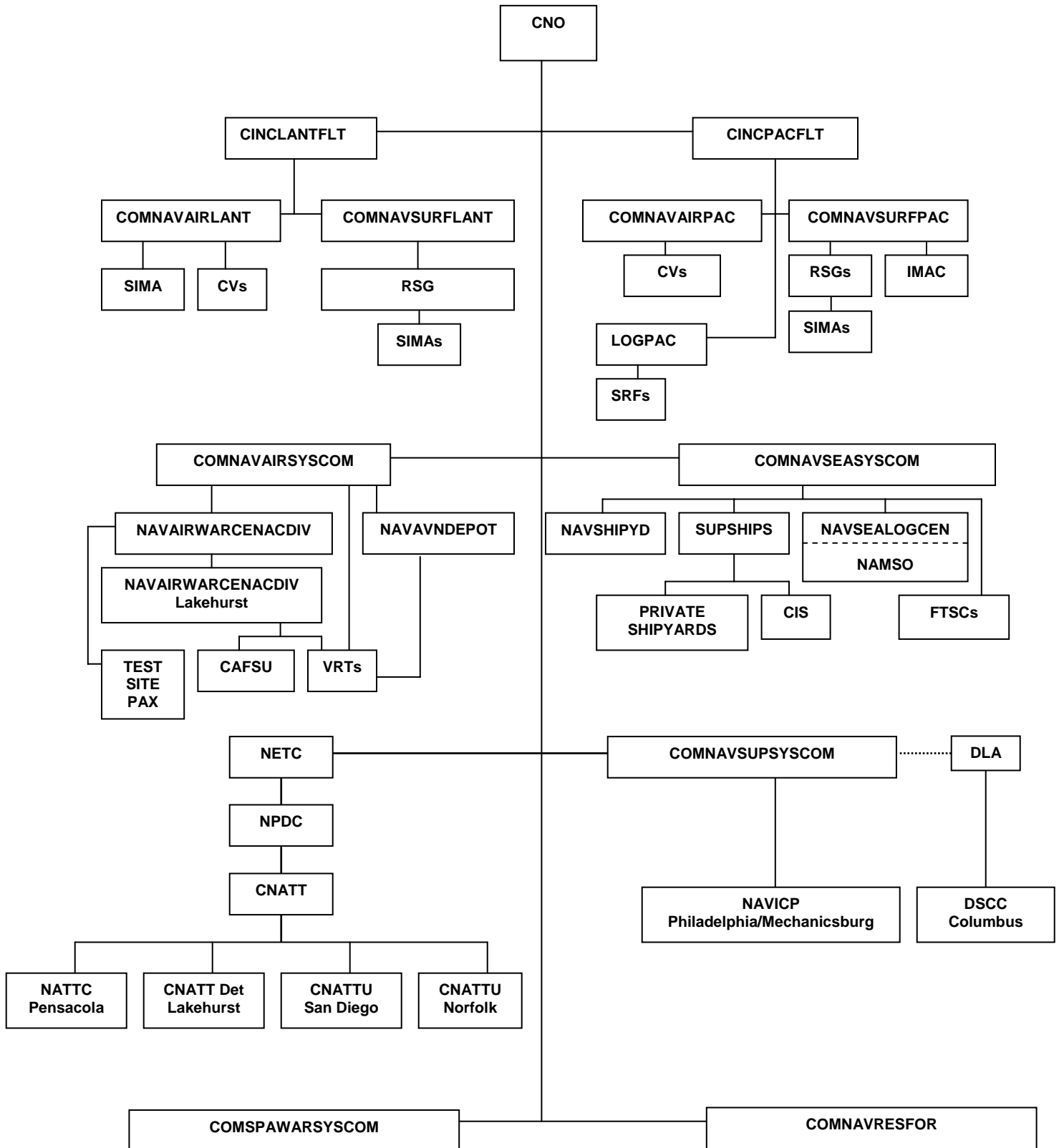


Figure 4-2. ALRE Maintenance Organization

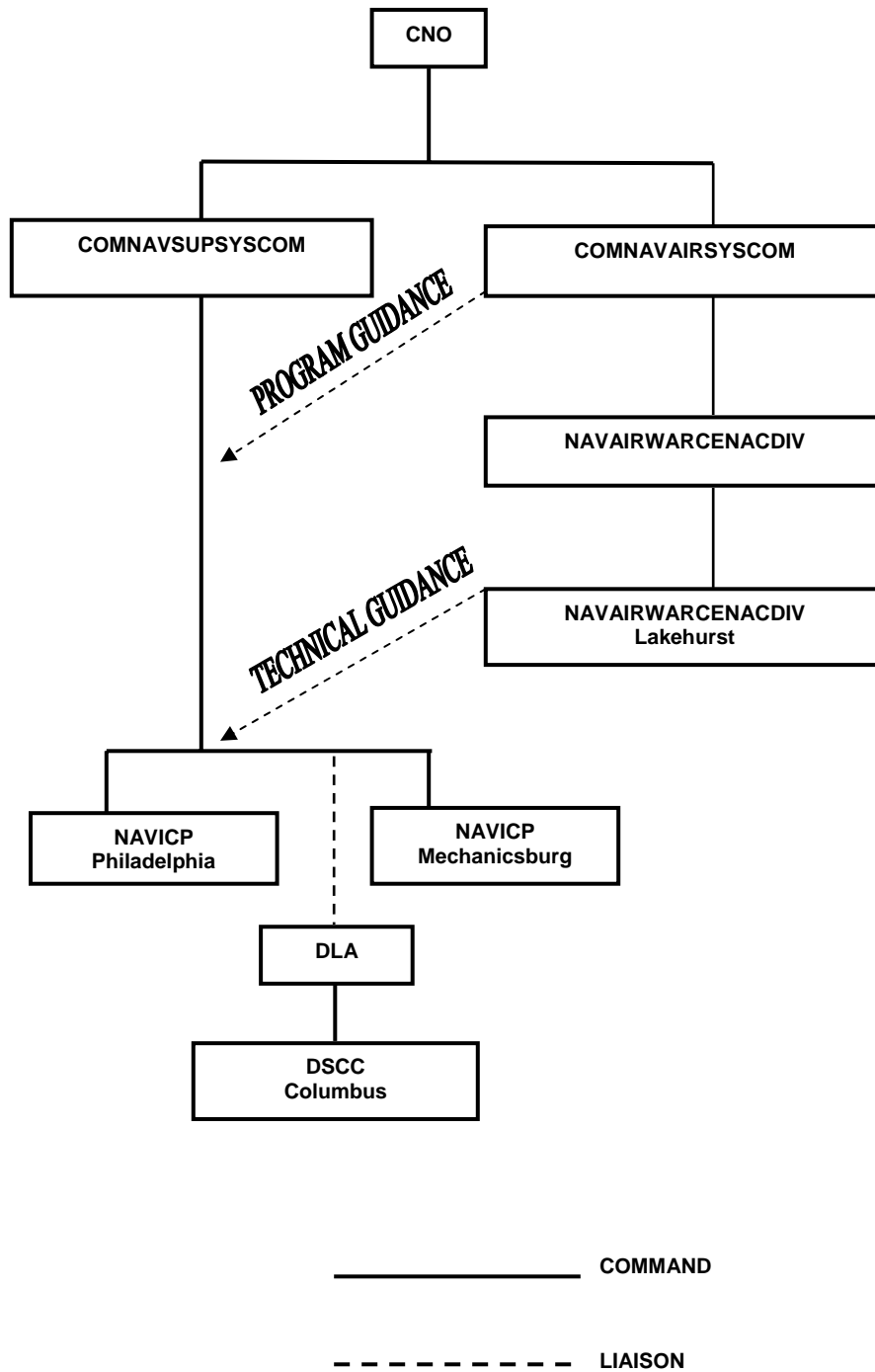


Figure 4-3. ALRE Supply Organization

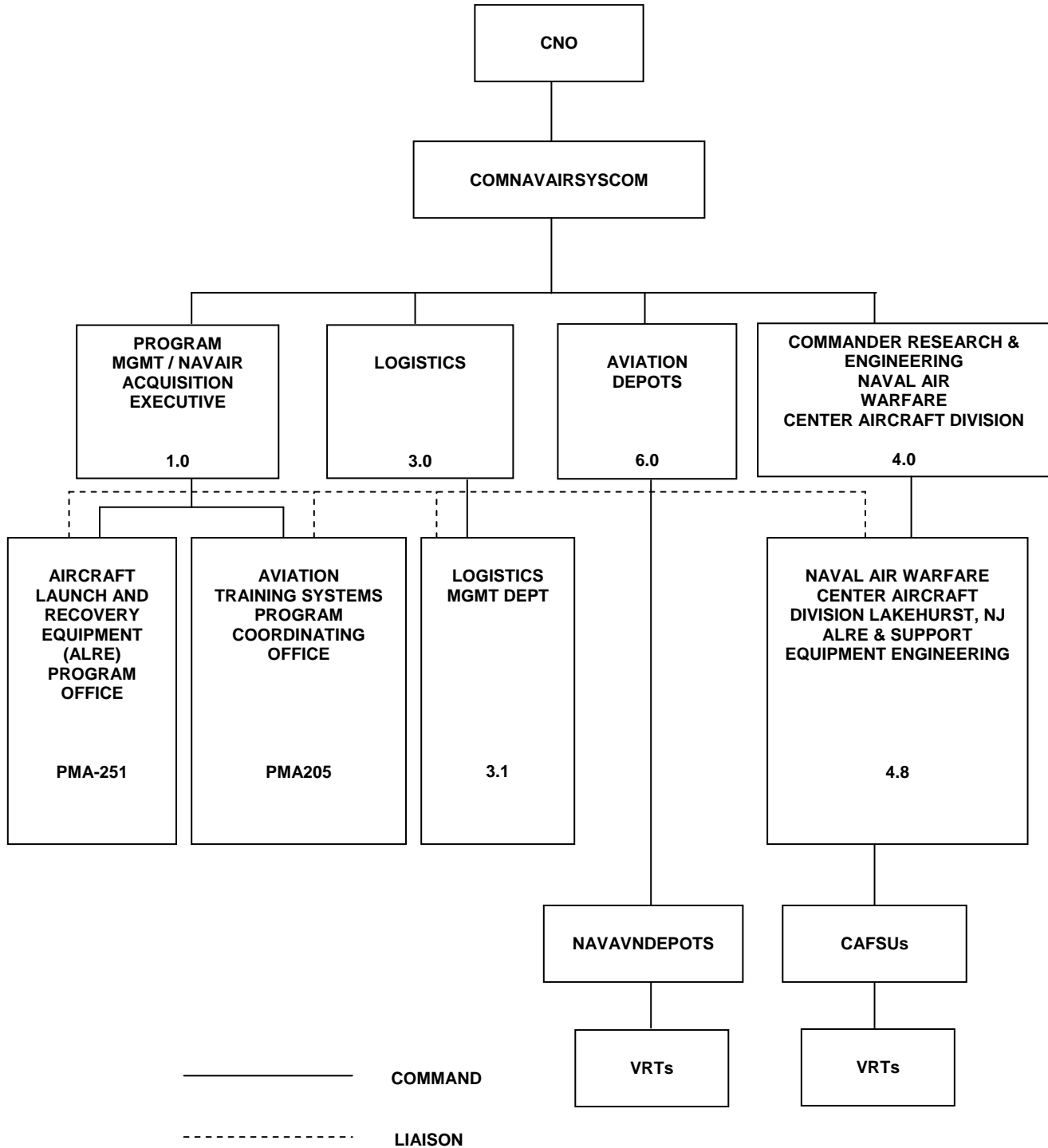


Figure 4-4. NAVAIRSYSCOM ALRE Maintenance Organization

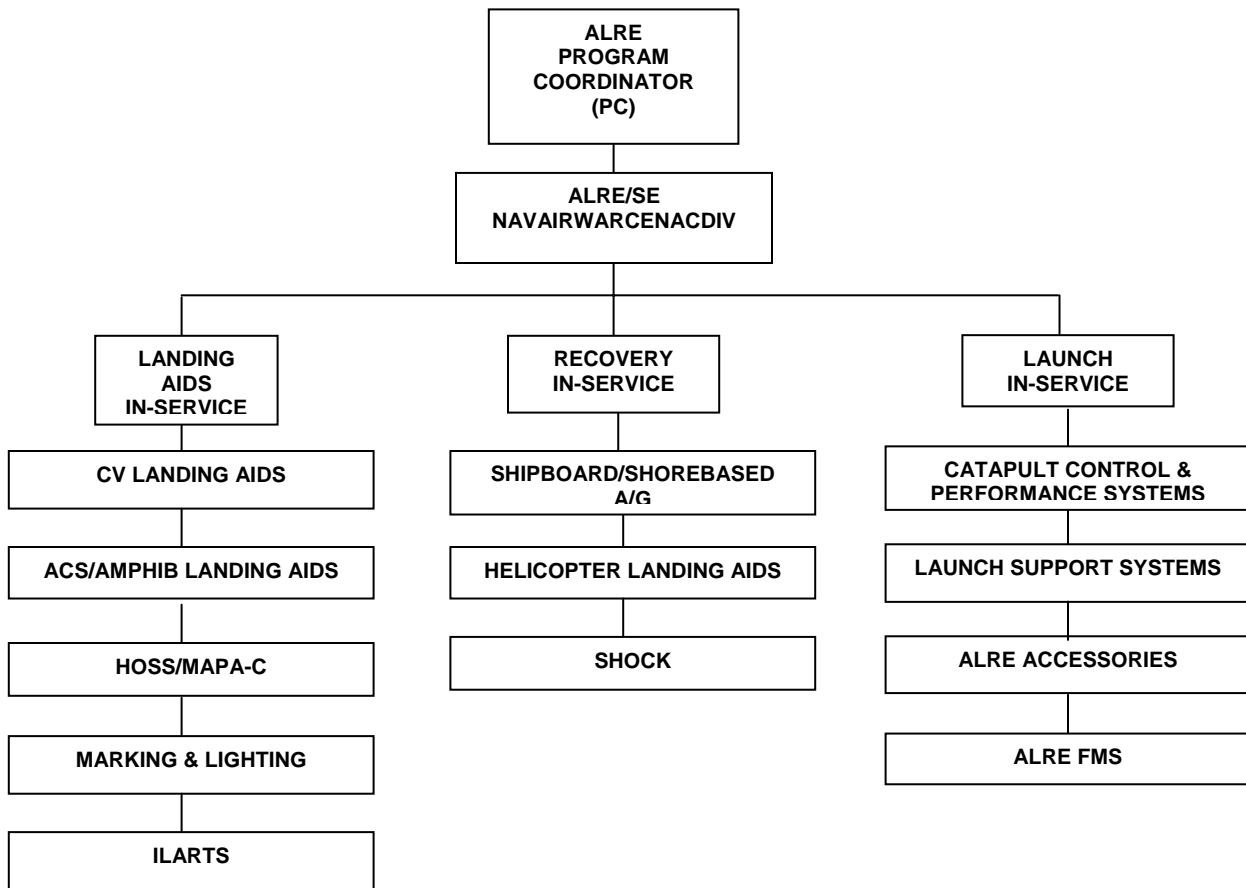


Figure 4-5. Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV) Lakehurst Organization

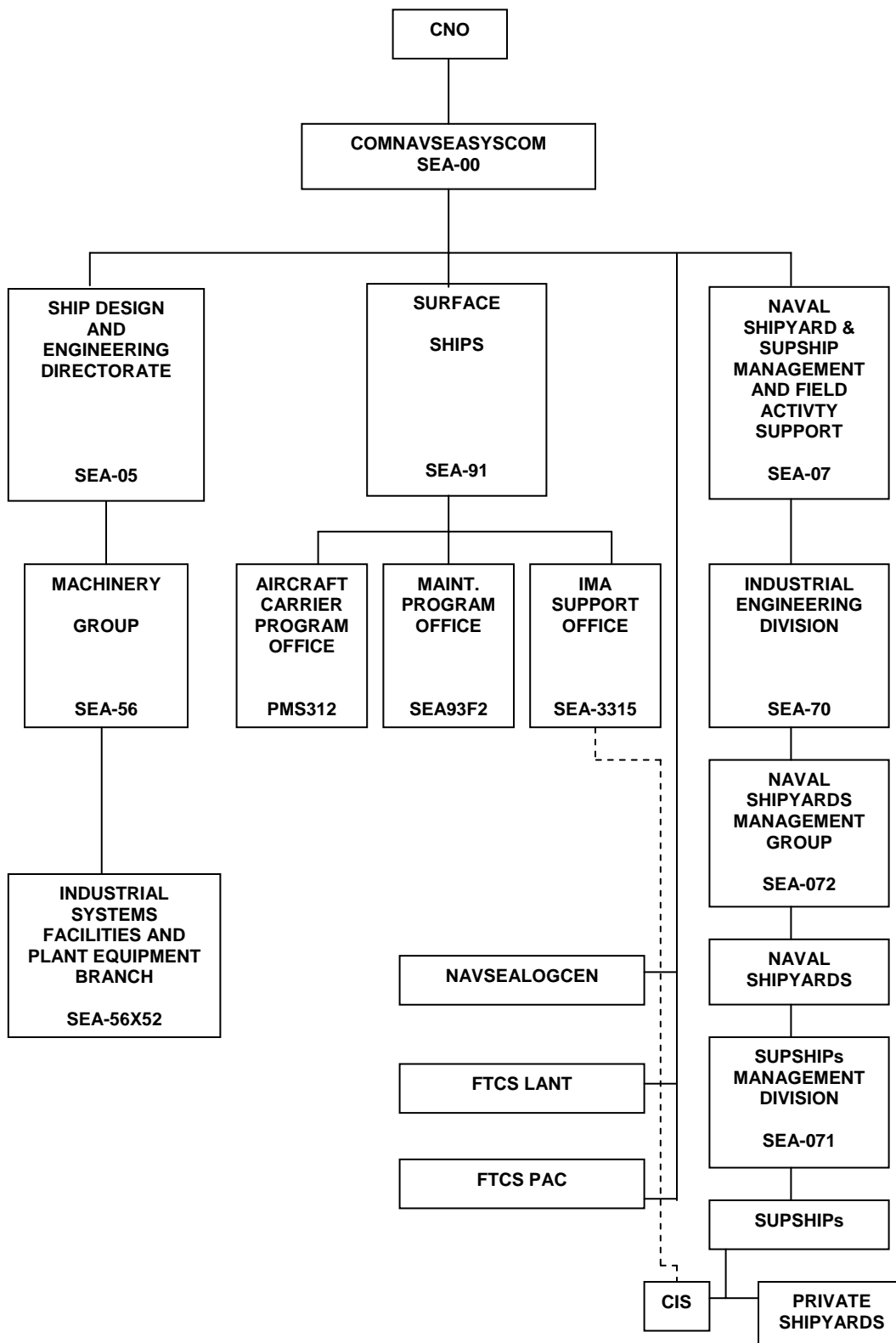


Figure 4-6. NAVSEASYS COM ALRE Maintenance Organization

Chapter 5 Training

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Chapter 5

Training

5.1 Navy Training Plan (NTP) & Naval Aviation Training Program

5.1.1 The NTP is a NAVAIRSYSCOM-developed document which lists the multiple elements required for life cycle support of new aircraft, systems, subsystems, or equipment. Development, approval, and implementation procedures are provided in OPNAVINST 1500.76. The NTP is the official statement of billets, personnel, and training input and resource requirements to support the introduction and operational use of aircraft, systems, subsystems, equipment, and other developments, including non-hardware related developments. The NTP assigns responsibilities for the planning, programming, and implementing actions necessary to provide required support to ensure:

a. Coordination of billets, personnel, military construction, training support, and training planning concurrently with hardware development and production.

b. Efficient and adequate training programs coincident with the introduction of aircraft, systems, subsystems, equipment, or other developments or modifications to existing systems or equipment.

c. Support of the policies established for system acquisition within the Navy Department.

5.1.2 The Naval Aviation Training Program requires that billets, personnel, military construction, training support, and training planning be performed concurrently with hardware development and production. Further, training programs will be phased in with adequate lead times to meet the introduction of new aircraft, systems, subsystems, and related equipment. Program organization and management shall be complementary and coordinated to provide for minimizing operating costs, personnel movement, training pipeline time, training billets, and special manning requirements. The program is designed to ensure basic, intermediate, advanced, and in-depth levels of training for all maintenance personnel to support existing, planned, and future weapon system acquisitions.

5.2 Command Relationships

5.2.1 Command relationships are based on lines of authority among various echelons as well as among various administrative and support activities. Many echelons are involved in training aviation maintenance personnel. Liaison is maintained across all

levels of command. Figure 5-1 illustrates the coordination relationships that exist in ALRE maintenance training.

Command Responsibilities

5.3.1 The Chief of Naval Operations (CNO) is responsible for training naval personnel and for directing the various commands and offices that provide resources required to implement the training program.

5.3.2 The Director, Air Warfare Division (N78) is responsible for:

a. The establishment of policy, requirements, and priorities for aviation training and the development of aviation training plans.

b. The supervision and direction of aviation training, including formal technical class A school training provided by the Naval Education and Training Command (NETC); the supervision and direction of Type Commander (TYCOM) aviation training; the approval of establishment, disestablishment, and modification of training programs; the programming of aviation training resource requirements, including training manpower; and approval or disapproval of Naval Air Technical Training Center (NATTC) Pensacola, Naval Air Technical Training Center Detachment (NATTC DET) Lakehurst, and Center for Naval Aviation Technical Training Unit (CNATTU) (Norfolk and San Diego) course establishment, disestablishment, and revision.

5.3.3 The DCNO (Manpower and Personnel), together with the Bureau of Naval Personnel (BUPERS):

a. Participates in personnel and training planning, in the development and review of Navy Training Plans (NTPs), and in meeting personnel inventory and skills requirements to support introduction of new acquisitions.

b. Performs occupational task analysis as specified by CNO in support of new systems and aviation training requirements.

5.3.4 The Commander, Naval Air Systems Command (COMNAVAIRSYSCOM):

a. Performs research, design, development, test, acquisition, and logistic support of all naval aviation weapon systems and associated material and equipment.

maintenance administration and management courses provided by FASOTRAGRULANT/PAC.

g. Provides on-site training and management assistance to all carriers through the ALRE Maintenance Management Teams.

5.3.7 The Naval Safety Center (NAVSAFECEN) provides technical assistance through reviews of training equipment, curricula, and training devices for safety related issues where inadequate training could result in excessive risk to personnel and equipment.

General Maintenance Training

5.4.1 This section defines the levels of training for ALRE personnel. It covers the required training for specific job requirements on ALRE systems and associated equipment.

5.4.2 Training is a continuing effort that begins with an individual's entry into service and continues through various courses, with his/her eventual assignment to a particular job. The technical knowledge and skills required to perform in the assigned job determine course requirements.

5.4.3 Training is accomplished in a sequential process with basic courses providing prerequisites for following courses. Most aviation personnel receive initial training en route to their first duty station. Those who do not attend Class-A school receive airman apprentice training following completion of recruit training and report directly to their ultimate duty station.

5.4.4 Formal training for ALRE personnel consists of "A" school at Naval Air Technical Training Center (NATTC) Pensacola and "C" school at CNATT DET Lakehurst, NJ. Most personnel undergoing ALRE training will follow a standard training path, with revisions and exceptions met on an as required basis. Recruit personnel enroute to a fleet billet will normally attend a class "A" school. Fleet personnel will normally attend specialized training in a class C course.

5.4.5 Navy Enlisted Classifications (NECs)

5.4.5.1 NECs supplement the enlisted rating structure by identifying personnel and billets in manpower authorizations. NEC codes reflect special knowledge and skills that identify personnel and requirements when the rating structure is insufficient by itself for manpower management purposes.

5.4.5.2.1 Personnel may earn five NECs that are maintained in the Enlisted Master Record for detailing and distribution purposes.

The Primary (PNEC) and Secondary (SNEC) NECs are reflected on the Enlisted Distribution Verification Report (EDVR) at local commands.

5.4.5.3 Successful completion of C school is mandatory for the assignment of ALRE NECs. NECs will be automatically awarded to ensure faster assignment and reduce paper work at the command level.

5.4.5.4 Commanding officers may recommend cancellation of an NEC assignment when personnel do not qualify or perform their NEC duties satisfactorily, normally within 6 months after reporting aboard. Full details are defined in the Navy Enlisted Manpower and Personnel Classifications and Occupational Standards, NAVPERS 18068 Series, the NEC Manual.

Navy Training Schools

5.5.1 NETC conducts training for officers and enlisted personnel in basic, technical, and specialized areas as described below:

a. Class A - Provides the basic technical knowledge and skills required to prepare an individual for entry level performance and additional specialized training. It includes apprenticeship training.

b. Class C - Provides the advanced knowledge, skills, and techniques necessary to perform a particular job in an assigned billet. An NEC may be awarded to identify the skill achieved.

c. Class F - Provides team training to fleet personnel, officer and enlisted, en route to duty as members of ship's company. It also provides individual refresher, operator, maintenance, and technical training to meet fleet or TYCOM needs.

5.5.2 The Naval Air Technical Training Center (NATTC) provides training for officers and enlisted personnel in the operation, maintenance, and repair of ALRE systems and associated equipment using maintenance trainers. Trainers are instructional units that provide training support for a system, specific equipment, groups of related equipment, or specialized techniques.

5.5.3 The Center for Naval Aviation Technical Training Unit (CNATTU) (Norfolk and San Diego) train fleet personnel in courses covering operation and maintenance of specific equipment and systems and in ALRE administration and management. They provide formal training for fleet personnel with the following courses:

a. ALRE Operation and Maintenance for Catapult Refresher

(C-604-2016)

b. ALRE Operation and Maintenance for Catapult Basic
(C-604-2024)

c. ALRE Shipboard Arresting Gear (C-604-2025)

d. ALRE Quality Assurance Administration (C-670-2017)

5.5.4 The Fleet Training Centers (FTCs) of Commander, Naval Education and Training Command (NETC), provide numerous courses in a wide variety of subjects. Course listing and quota control information are listed in the Catalog of Navy Training Courses (CANTRAC), NAVEDTRA 10500.

5.5.5 Shipyard technical training for fleet personnel consists of regularly scheduled courses that are convened periodically at naval shipyards and cover a wide range of technical areas. Courses not regularly scheduled may be arranged through the TYCOM, if sufficient requirements exist. Courses are normally in the hull, mechanical and electrical (HM&E) areas and include various types of welding, gas detection, insulation/lagging, brazing, boat repair, degaussing, rigging, fire watch, wire rope construction, and other similar industrial disciplines.

5.5.6 The Aviation Training Support System (ATSS) is a computerized system used to facilitate management of the training program. ATSS provides student scheduling for various courses, generates student reports, performs diagnostic testing and grading, and maintains individual and unit statistical data.

ALRE Maintenance Officer Training

5.6.1 ALRE maintenance officers shall attend, and successfully complete, the ALRE maintenance officer course prior to reporting for duty. The course provides the essential prerequisites for initial assignment to an ALRE maintenance officer billet. Topics include basic qualifications in management principles and techniques, ALRE systems and equipment, supply fundamentals, maintenance and material control procedures, quality assurance requirements, the Planned Maintenance System (PMS), launch and recovery bulletins and technical directives, data collection requirements, and the fundamental elements of the Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP).

In service Training

5.7.1 In service training is a command responsibility. Since this training represents a major contribution to the Navy's overall efforts, a systematic in-service training program shall be

5.7.5 Required reading consisting of certain directives and publications, as directed by the division officer, are routed for dissemination as maintenance information. The material should be incorporated in the active required reading file for each branch or work center. The active file contains temporary maintenance information and such other information as the division officer may direct. The standing file will contain material of a continuing nature that has been read and initialed by all personnel presently assigned, but which is kept on file for the indoctrination of new personnel. The Required Reading and Maintenance Information Record (OPNAV 4790/34) (figure 8-2) is used to maintain a record on the progress of each person. When a required reading document is not itself contained in the reading file, a cross-reference sheet giving the document's location is filed in its place. Files are reviewed and initialed at least once monthly by the V-2 division officer and obsolete material removed.

5.8 The Maintenance Training Improvement Program (MTIP)

5.8.1 MTIP is a training management system, which through diagnostic testing procedures, identifies training deficiencies in maintenance personnel. The program is compatible with and supports traditional technical training programs in naval aviation. Through individual evaluation of technical knowledge levels, a quantitative assessment can be made of existing training courses and material. Such assessments allow for corrective action to enhance technical knowledge levels and to improve existing training courses.

5.8.2 The Director, Air Warfare Division (N78), as program sponsor, shall provide overall program direction. The following policies are applicable:

- a. MTIP shall be implemented throughout naval aviation.
- b. Program support will be provided through a computerized management/operating system.
- c. Standardized program procedures will be developed and coordinated with the TYCOMs to the maximum extent consistent with organizational requirements and capabilities.
- d. Final skill qualification remains with the activity. Minimum skill certification requirements will be established by the appropriate unit commander to meet safety requirements.

h. Measure program effectiveness of formal training courses to provide full support of the Human Performance Requirements Review (HPRR) process.

5.9 ALRE Maintenance Management Teams

5.9.1 The TYCOM ALRE Maintenance Management Teams are available to advise, train, and assist fleet activities with aircraft launch and recovery equipment maintenance procedures, logistics support problems, and personnel utilization. Detailed information on concepts, responsibilities, and procedures are found in Chapter 6.

5.10 Human Performance Requirements Review (HPRR)

5.10.1 The HPRR is a CNO-sponsored review of designated weapon systems training courses, to ensure the fleet has the best-trained maintenance personnel. The HPRR:

- a. Identifies deficiencies in current training tracks, courses, curriculum content, and NECs.
- b. Resolves problems that have previously been identified.
- c. Programs corrective action.
- d. Establishes a tailored training track for enlisted aviation billets, where applicable.
- e. Provides a communications bridge for community participants to generate an interchange of ideas.

5.10.2 The HPRR process, which also applies to ALRE training, ensures compliance with CNO policy and development of structured training tracks to promote standardization between fleets per the following basic guidelines:

- a. Formal training shall be limited to subject matter taught most effectively and economically in a classroom setting.
- b. OJT will be used to reinforce classroom training, where feasible.
- c. Formal structured training shall provide the knowledge and skill required of specific tasks, which the trainee will be required to perform.

5.10.3 The HPRR consolidates all elements of the training process. Commands represented on the policy committee include CNO, NETC, COMNAVAIRLANT, and COMNAVAIRPAC. Advisory committee membership includes Bureau of Naval Personnel (BUPERS), NAVAIRSYSCOM, and

others as appropriate. Policy and advisory committees primarily are concerned with maintenance and training policy. Working committees comprise fleet subject matter experts (SMEs) who must be familiar with the technical aspects of the weapon system to be reviewed. SMEs must also be aware of current maintenance problems and their relationship to the training process.

5.10.4 When an HPRR conference is announced; affected TYCOMs should schedule and conduct a preliminary conference. The preliminary conference indoctrinates participants in review, scope, objectives, procedures and reports. Information concerning training tracks and applicable courses will be provided. Participants in the preliminary conference will be required to attend the CNO conference and are to be selected accordingly.

5.10.4.1 Participants will normally perform the following at the CNO-sponsored conference:

- a. Review existing training and modify as required.
- b. Establish new training as required.
- c. Recommend revisions, deletions, or development of new NECs.
- d. Identify and describe new course requirements.
- e. Identify problems relative to training deficiencies that impact on fleet readiness and make appropriate recommendations.

5.11 Organizational Responsibilities

5.11.1 The Commanding Officer is responsible for personnel training within his/her command. All local unit training will include appropriate elements of OPNAVINST 5100.8G, Navy Safety Precautions for Forces Afloat, 5100.19D NAVOSH for Forces Afloat and OPNAVINST 5100.23F, Navy Safety and Occupational Safety and Health Program.

5.11.2 The air officer is responsible for ensuring that training is accomplished for both permanently and temporarily assigned personnel and for ensuring adequate monitoring of appropriate personnel documents (EDVR, OPNAV 1000/2, etc.). The air officer will ensure that the MTIP is conducted per TYCOM directives.

5.11.3 V-2 division officers shall establish and carry out a suitable training program as directed by the air officer, monitor and coordinate the training of personnel assigned to the division, maintain appropriate records of completed training, and ensure adherence to OJT, PQS and MTIP.

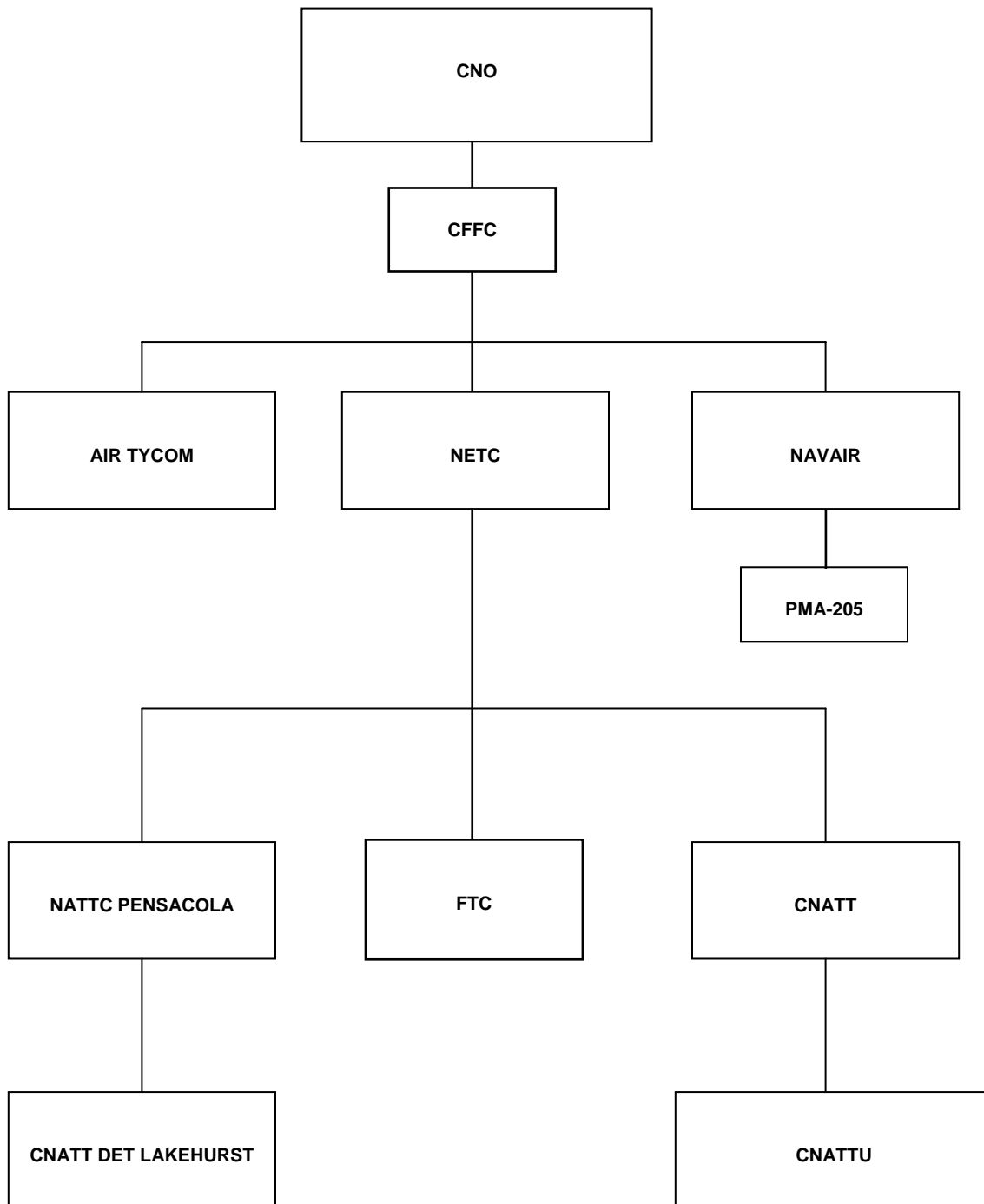


Figure 5-1. ALRE Training Organization

launching and recovery equipment maintenance procedures, including related administrative and logistics requirements. Specific functions include, but are not limited to:

a. Providing guidance in interpretation of ALREMP directives, detecting and assisting in resolving problems, and ensuring uniformity and standardization of policies and procedures in all fleet CV/CVNs.

b. Providing advice, training, and assistance in proper operation, maintenance of ship's installed ALRE.

c. Analyzing personnel use, including NEC assignment and utilization, divisional Enlisted Distribution and Verification Report (EDVR) management, and Ship's Manning Document (SMD) requirements for the V-2 division.

d. Advising, training, and assisting with maintenance training procedures, Personnel Qualifications Standards (PQS), and the Maintenance Training Improvement Program (MTIP).

e. Providing informal liaison between the fleet unit and the TYCOM staff.

f. Reviewing and advising management and supervisory personnel regarding compliance with all aspects of the quality assurance program.

g. Advising and assisting in proper maintenance and material control techniques, requisitioning procedures, and record keeping requirements.

h. Reviewing and recommending changes to ALREMP policy, procedures, instructions, and publications.

i. Upon completion of formal audits, forward a copy of all discrepancies and comments to COMNAVAIRSYSCOM (PMA251).

6.4 Scheduling

6.4.1 ALRE Maintenance Management Team visits will be scheduled by the TYCOM on a routine basis, with each ship visited at least once during the work-up cycle and/or during shipyard availabilities. Formal audit shall be conducted for fleet carriers prior to deployment and to ALRE Shore activities annually. The ALRE Management Team may come aboard for unscheduled assist at the TYCOMs discretion or may be requested by the activity via naval letter or message whenever the command feels it is necessary.

6.4.2 ALRE maintenance management teams shall inform COMNAVAIRSYSCOM (PMA251) as early as possible, but no less than 2 weeks prior to the actual dates of all formal audits.

6.5 Evaluation Criteria

6.5.1 Assist visits are informal in nature and results should be provided to the command at the conclusion of the visit by informal means. If major discrepancies are observed during the assist visit, the chain of command will be notified immediately by the ALRE Maintenance Management Team and a formal letter to the ship's Commanding Officer will be required.

6.5.2 Formal audits will require a formal report, listing all discrepancies, and a summary statement will be forwarded to the Commanding Officer within 30 days of audit completion. A copy of the report will also be forwarded to COMNAVAIRSYSCOM (PMA 251F2).

6.5.3 A report of corrective action taken will be submitted to the Type Commander within 30 days of the receipt of the formal audit results. Each discrepancy listed in the report will be addressed individually to correspond with item/paragraph. Major discrepancies must be corrected within 30 days. Updates will be submitted every 60 days until all discrepancies are corrected.

6.5.4 Major discrepancies identified that are safety-related will require a grade of unsatisfactory during the audit and must be reevaluated as soon as the ship has taken corrective action.

6.5.5 TYCOMs will provide guidance for including the results of audits as part of overall determination of the competitive award for efficiency (Air Department YELLOW "E").

NOTE

A major discrepancy is any deficiencies which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities.

Chapter 7 Special Programs

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- a. Addition or installation of any new equipment.
- b. Deletion, removal, turn-in of any installed equipment.
- c. Replacement or exchange of any equipment (requires two documents, one for removal and one for replacement).
- d. Modification of any installed or in-use equipment.
- e. Relocation of any equipment to a new deck, new frame, or new compartment.
- f. Accomplishment of any alteration directive; i.e., Field Change, Service Change, Ship Alteration (SHIPALT).
- g. Correction of incorrect or deficient data in basic configuration records.

7.8 Flight Safe Program

7.8.1 The Aircraft Launch and Recovery Equipment (ALRE) Flight Safe Program, helps to ensures that critical ALRE parts, installation/overhaul processes receive the degree of quality control necessary to maintain safe and efficient ALRE operations.

7.8.1.1 Flight Safe Critical Safety Item (CSI). Quality control of ALRE CSI parts are essential to facilitate correct installation and maintain operational safety. In order to ensure parts that are critical to safe ALRE operations are manufactured and tested to NAVAIR drawing specifications, the designation of Critical Safety Items has been applied to these specific parts. The list of CSI is available through the NAVICP website www.navicp.navy.mil. Select "Ships/Subs", then select "extranet" and finally select "ALRE". Guidance concerning Critical Applications including Critical Safety Items are provided in NAVAIRINST 4200.25D.

7.8.1.2 Action required of organizational/intermediate level activities.

- a. Prior to the installation of a CSI part, locate the QA stamp number and record this number in block 35 of the ALRE Maintenance Action Form OPNAV 4790/160 as well as in the remarks section of the Installed Parts List (IPL) of the Installed/Discrepant Parts List (I/DPL). The number is in the format QA XX-XXX.

7.8.1.5 Action required of DEPOT level activities.

a. If during the repair or overhaul of an ALRE component, a CSI designated part is required, ensure compliance with the applicable NAVAIR technical manual. When a CSI designated part is installed, including shipboard and ship-to-shop repaired/overhauled equipment, ensure the QA stamp number, specific job order number and applicable work center is recorded and provided to the ship's ALRE Maintenance Officer.

7.9 Installed/Discrepant Parts List (I/DPL)

7.9.1 The ALRE I/DPL Program is an automated computer program that will identify ALRE components and parts that have been determined to be discrepant. The program contains two separate databases, one listing discrepant parts, and one to locally document parts installed in shipboard ALRE equipment and systems. The program will identify discrepant parts prior to their installation and, after being updated, it will identify previously installed parts that have since been identified as being discrepant.

7.9.1.1 The Installed Parts List (IPL) contains a running account of parts installed in ALRE equipment and systems. The IPL shall be initiated, maintained, and updated by adding new items as they are installed or by updating currently installed parts when they are replaced.

7.9.1.2 The Discrepant Parts List (DPL) is used to identify parts that are discrepant prior to installation in ALRE equipment or systems. The DPL contains an up-to-date listing of all known discrepant parts that could be issued from the supply system for use by maintenance personnel. The program can also be used, after receipt of a disk with updated discrepant parts information, to determine if there are discrepant parts currently installed in ALRE equipment or systems. NAVAIRWARCENACDIV, Fleet Liaison, Code 4.8.10.5, Lakehurst NJ maintains the Discrepant Parts database. They will furnish updates to each command utilizing this program on a monthly basis.

7.9.2 Ships and applicable shore activities will submit an updated shipboard installed parts file no later than the 5th day of each month. Submission of I/DPL inputs should be made via e-mail to NAVAIRWARCENADLKE Fleet Liaison Code 4.8.10.5 when available. When e-mail is not available disk shall be sent to:

**NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, LAKEHURST
BLDG. 596/1 ATTN: 4.8.10.5
HWY 547
LAKEHURST, NJ 08733-5090**

To ensure disks are received in a timely fashion, NAVAIRWARCENACDIV Lakehurst Code 4.8.10.5 will notify Naval Air Systems Command PMA 251 and respective TYCOM's monthly of status of required reports.

7.9.3 Detailed instructions concerning the I/DPL Program are listed in NAWCADLKE-48J500-0007 Aircraft Launch and Recovery Equipment Installed/Discrepant Parts List Program Users Manual (Ship's) & Users Manual (Manager's).

7.10 Automated Shot and Recovery Log Program (ASRL)

7.10.1 The ALRE ASRL Program consists of two major subsystems - The ASRL Main System and the Log Entry System. The ASRL Main System is used to accumulate the log entry data from the remote work center PCs and provides an array of capabilities. The Log Entry System is designed to be installed on remote work center PCs to allow independent entry of steam catapult and pri-fly recovery data.

7.10.2 Steam Catapult Log

7.10.2.1 Catapult launching data shall be kept in a catapult rough shot log or directly loaded into a computer system running the ASRL Log Entry Program. Daily, the launching data will be transferred to the Automated Shot and Recovery Log Program (ASRL Main). Detailed instructions concerning the ASRL program are listed in NAWCADLKE-48J500-0009, Aircraft Launch and Recovery Equipment (ALRE) ADP Program Users Manual.

7.10.2.2 ASRL Data shall be collected by all activities operating steam catapults for all launches, including no load and dead load. Care shall be taken to provide complete and accurate information. A clock, synchronized with ILARTS time, shall be installed in a location where it will be plainly visible from the console recorder's station during all launches.

7.10.2.3 Ships shall print out completed log sheets and review them for accuracy prior to creating a disk for NAVAIRWARCENACDIV Lakehurst. After any corrections are made, log sheets will be signed by a catapult officer, arranged in chronological order, and retained for a period of 1 year. The backup disk will serve as the ship's permanent record and will be retained with the life of the ship.

Note

Ensure that all disks are virus scanned prior to transferring data into the system or after data has been transferred to disk. Viruses can corrupt data and disable computers. Also, viruses may

be passed between computers via disk. It is essential to check disks when they are received or prior to forwarding.

7.10.2.4 Ships shall submit ASRL reports no later than the 5th day of each month. Submission of ASRL reports should be made via e-mail to NAVAIRWARCENACDIV Fleet Liaison Code 4.8.10.5 when available. When e-mail is not available disk shall be sent to:

**NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, LAKEHURST
ATTN: CODE 4.8.10.4
HWY 547
LAKEHURST, NJ 08733-5090**

To ensure disks are received in a timely fashion, NAVAIRWARCENACDIV Lakehurst Code 4.8.10.5 will notify Naval Air Systems Command (PMA 251) and respective TYCOM's monthly of status of required reports.

7.10.3 Recovery/Wire Rope History Logs

7.10.3.1 Arresting gear data shall be kept in an arresting gear rough log or directly loaded into a computer running the ASRL Log Entry System. A clock, synchronized with ILARTS time, shall be installed in a location where it will be plainly visible from the Pri-Fly Operator's station during all recoveries. Daily, the recovery data will be transferred to the Automated Shot and Recovery Log Program (ASRL). Detailed instructions concerning the ASRL program are listed in NAWCADLKE-48J500-0009, Aircraft Launch and Recovery Equipment ADP Program Users Manual.

7.10.3.2 Ships shall print out completed log sheets of both Pri-Fly Recovery Logs and Wire Rope History and review them for accuracy prior to creating a disk for NAVAIRWARCENACDIV Lakehurst. After any corrections are made, log sheets will be signed by the Arresting Gear Officer, arranged in chronological order, and retained for a period of 1 year. The backup disk will serve as the ship's permanent record and will be retained with the life of the ship.

Note

Ensure that all disks are virus scanned prior to transferring data into the system or after data has been transferred to disk. Viruses can corrupt data and disable computers. Also, viruses may be passed between computers via disk. It is essential to check disks when they are received or prior to forwarding.

7.10.3.3 Ships shall submit ASRL reports no later than the 5th day of each month. Submission of ASRL reports should be made via e-mail to NAVAIRWARCENACDIV Fleet Liaison Code 4.8.10.5 when available. When e-mail is not available disk shall be sent to:

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, LAKEHURST
ATTN: CODE 4.8.10.4
HWY 547
LAKEHURST, NJ 08733-5090

To ensure disks are received in a timely fashion, NAVAIRWARCENACDIV Lakehurst Code 4.8.10.5 will notify Naval Air Systems Command PMA 251 and respective TYCOM's of status of required reports.

7.10.4 Flight Deck Operations Report (Part I Launching and Part II Landing). These reports shall be submitted quarterly by the Commanding Officer of all active aircraft carriers. This report shall be submitted, in paper format, via the main ALRE ASRL system, no later than the 15th day of each month following the end of each quarter to:

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, LAKEHURST
HWY 547 ATTN: CODE 4.8.10.4
LAKEHURST, NJ 08733-5090

COMMANDER NAVAL SAFETY CENTER (51)
NAVAL AIR STATION
NORFOLK, VIRGINIA 23511

TYPE COMMANDER

9.7 Unscheduled (Corrective) and Scheduled (Planned Maintenance System (PMS)) Maintenance Procedures

9.7.1 Figure 9-6 depicts the normal flow of maintenance documentation during an unscheduled corrective maintenance action and figure 9-7 depicts the normal flow for scheduled planned maintenance (PMS) procedures.

NOTE

MAFs should be filled out as the job progresses to avoid processing delays when the job is completed.

ALRE PMS Maintenance Requirement (MR) Status Boards

9.8.1 PMS requirements are based on either calendar periods (e.g., daily, weekly, monthly) or situational requirements (number of catapult shots and arresting gear arrestments.) Documentation of shots and hits is mandatory to ensure that prescribed maintenance requirements and inspections are performed on time. Tracking of shots and hits is maintained by use of the Automated Shot and Recovery Log Program (ASRL), Daily "R" Status file and maintenance requirements (MR) status boards. Specific instructions on ASRL is contained in NAWCADLKE-48J500-0009. MR Status boards will be located in maintenance control and each applicable work center to track PMS Maintenance Requirements (R-checks).

9.8.2 MR status boards will reflect, at a minimum, situational PMS maintenance requirements (R-checks). Status boards will be locally procured/produced and will contain information on each time/shot/hit-related maintenance task specified in the PMS system. The minimum data elements required include:

- a. MR card number (M-1R, M-15R, etc.)
- b. Brief description of task and frequency of requirement.
- c. Shot or hit number MR due and last accomplished.
- d. Total shots or hits to date.

9.8.3 Maintenance control's MR status board will reflect all W/C requirements.

NOTE

Status boards are official records containing vital information. Maintenance control boards will be maintained and changed only by the ALRE maintenance officer, maintenance control supervisor, or a person specifically designated by the ALREMO. Work center boards

will be maintained by the W/C supervisor or his/her designated assistant.

9.8.4 Work center supervisors will provide updated information on shots, hits or changes which affect equipment status as it occurs or at the completion of each operating day.

9.8.5 Daily verification of the maintenance control MR status board with the work centers is essential to maintain current and correct job and equipment status. In order to ensure accuracy, correctness, and continuity of shot, hit, and/or inspection requirements, every status change must be reflected on each applicable MR status board.

9.8.5.1 Daily, at a time specified by the M/C supervisor, each W/C supervisor shall verify MR status on his/her MR status board with maintenance control. Any variation in any MR element will be resolved at this time. Verification may be done via phone, intercom, or in person using a written list, as locally established.

9.8.5.2 The W/C supervisor (or assistant) shall certify verification by annotating with date/time and initials alongside the W/C designator on the M/C MR status board. The M/C supervisor shall annotate date/time that all work centers have verified on the upper right-hand side of the M/C MR status board.

Supporting Maintenance

9.9.1 Certain ALRE maintenance support is provided by the ship's AIMD. Documentation of AIMD support requires use of the Visual Information Display System/Maintenance Action Form (VIDS/MAF) (OPNAV 4790/60) shown in figure 9-8 or entered into NALCOMIS or a work request. This is used to request AIMD services of items beyond V-2 division capability, including non-destructive inspection (NDI), emergency parts manufacture and other such services as may be needed. When AIMD support is required, a work request is initiated utilizing AIMD MAF form OPNAV 4790/60. The cognizant work center will initiate an ALRE MAF referencing the AIMD MAF JCN in the block provided. When the job is completed, the work center will forward the controlling ALRE MAF with the completed AIMD MAF copy attached to M/C for review. M/C reviews the accuracy of the completed MAF (with completed AIMD MAF attached), closes out the MAF and forwards the MAF to QA for filing. A copy may be provided to the work center.

Deviations from Normal MAF/MAF Card Procedures

9.10.1 Safety of operations is paramount. In those situations where extraordinary actions are required to either protect life and

equipment or to accomplish the mission, routine documentation procedures may be waived until normal operations can be resumed. Documentation of all maintenance actions shall immediately follow the action in such cases; however, the proper quality assurance verification and surveillance must be maintained. The following guidelines will be adhered to:

a. In cases where immediate maintenance action is necessary, where time is extremely critical to preclude certain or likely death/injury to personnel or loss/damage to equipment, emergency deviation from routine MAF flow/work documentation is justified and may be authorized. (See figure 9-9.)

b. If the ALRE maintenance officer/maintenance supervisor or higher authority has approved emergency deviation, only the MAF documentation procedure is modified. All maintenance procedures remain as previously described. The MAF shall be initiated immediately after the job is complete, provided the ALRE maintenance officer/maintenance supervisor and QA have ensured that all maintenance actions were satisfactorily completed by personally witnessing events. This is the only time equipment can go from DOWN to UP status without an ALRE maintenance officer/maintenance control supervisor signature on a MAF.

NOTE

Ensure contract numbers of parts installed are annotated on the MAF when it is completed. ALRE Maintenance Officer/Maintenance Chief shall initial contract number block of ALRE MAF for all UNKNOWN contract number entries.

c. In cases which do not meet the criteria for emergency deviation as given in paragraph 9.10a, but timely return of equipment to operational status is still necessary, the work center will take the MAF to the job site so that the ALRE maintenance officer/maintenance control supervisor may sign it off as a completed job immediately upon witnessing the work and appropriate QA inspection and operational check, if required. This procedure entails all the same elements as routine MAF flow/work documentation.

9.11 Tracking Outside Maintenance Activity Job Status

9.11.1 During technical availability's or periods such as restricted availability's (RAVs), selected restricted availability's (SRAs), complex overhauls (COHs) and planned incremental availability's (PIAs), outside maintenance activities may repair or modernize Aircraft Launch and Recovery Equipment (ALRE). It is imperative that the ALRE maintenance officer monitors this industrial activity repair progress and performance.

Ship's force maintenance during availabilities and COHs will still be tracked using the standard maintenance control and work center VIDS boards.

9.11.2 The authorized integrated work package control document (IWPCD) will be used to identify jobs to be tracked and the accomplishing activities. This document also identifies cognizant work centers, JSNs of all work planned for VB work centers, and JSNs of all other jobs that may affect divisional work centers (but that are not listed under VB) such as ship alterations.

9.11.2.1 During availabilities where the IWPCD is not used, JSNs may be obtained from the ship's force work list. Additionally, liaison with the ship's maintenance manager may help with determining screening action for jobs requiring outside maintenance activity assistance.

9.11.3 Utilizing a MAF card specifically designed for the outside maintenance activity MAF board (see figure 9-11), transcribe the following information from the IWPCD: work center, JSN, brief job description, extended ships work breakdown structure (ESWBS), IWPCD item number, equipment location, and the activity accomplishing the task. Place each MAF card on the outside maintenance activity VIDS board under the section designated for that particular activity and W/C. The QA block at the bottom right corner of this MAF card may be used like that on a standard MAF card. The activity block at the bottom right corner may have the outside maintenance activity annotated and/or be color coded to indicate the activity; color coding should not conflict with those color codes described in paragraphs 9.5.3 through 9.5.4. When color-coding is used, a legend depicting which color refers to which activity should be displayed at the top of the VIDS board.

9.11.4 Each job approved for accomplishment within the V-2 Division must be tracked utilizing either a locally printed Progress Report Sheet (PRS) figure 9-12, automated data base or other tracking method to maintain up to date status of each outside maintenance activity job and correspond to each MAF card on the outside maintenance activity VIDS board.

NOTE

THE USE OF A PROGRESS TRACKING METHOD IS MANDATORY.

9.11.4.1 Review the IWPCD and transcribe the following to the tracking method: W/C, JSN, job description, ESWBS, and IWPCD item number.

9.11.4.2 On a weekly basis, or as required, the tracking method utilized will be updated by indicating percentage toward completion

and by annotating notes deemed necessary by the ALRE maintenance officer.

NOTE

Ensure all jobs that require a functional test or inspection by ship's force personnel are monitored for completion of this step.

9.11.4.3 If utilized, PRSs should be initiated for each job approved for accomplishment within V-2 Division. PRSs shall be kept in a loose leaf, three-ring binder. Filing them in work center/job sequence number order provides an easy cross-reference with the outside maintenance activity VIDS board. A PRS may be discarded when that job is completed and the requisite forms have been completed (OPNAV 4790/CK, ALRE MAF, Configuration Service Change Status Form 1511, etc.).

9.11.4.4 If a new job develops as a result of an Emergency Essential Repair (EER) or Assist Ship's Force (ASF) funding being made available, an additional MAF card must be originated and the MAF card placed on the outside maintenance activity VIDS board and added to whichever tracking method is utilized.

9.11.5 In addition to completing the specific job on the Current Ship's Maintenance Project (CSMP), jobs having Equipment Identification Codes (EICs) for ALRE equipment (7A through 7M, LH, and TU), require an ALRE MAF to be originated and submitted. Submission of an OPNAV 4790/CK or Configuration Service Change Status Form No.1511 may also be required.

9.11.6 When completing an ALRE MAF to document work accomplished by outside maintenance activities, the MAF shall be filled out as appropriate, with the following special instructions:

a. Block 29 (Action Taken):

(1) For maintenance actions where the outside activity provides all parts, ensure the numeral "3" (which means "Maintenance Completed, No Parts Required") is entered.

(2) For maintenance actions where ship's force provides some or all parts for the job, ensure the proper code is entered; also ensure the Remarks/Description section of the ALRE MAF is detailed enough to reflect those portions of maintenance performed by ship's force and by the outside activity.

NOTE

For jobs performed by outside maintenance activities where ship's force provides some or all parts, or where ship's force provides maintenance assistance, including system or component

disassembly or reassembly, a standard MAF card, an outside maintenance activity MAF card, and an ALRE MAF are required. Each will bear the same JSN. The standard MAF card will be placed on the normal divisional VIDS board to track ship's force maintenance and/or parts; the outside activity MAF card will be used to track that activity's job status; and the MAF will be used to document the job. Only ship's force man-hours should be recorded on the normal MAF/MAF card. The standard MAF card should never be removed from the divisional VIDS board before the outside maintenance activity MAF card is removed from its VIDS board.

b. Block 36 (Continuation Sheet): Ensure this block is checked when it is necessary to continue Block 35 (Remarks/Description) comments on additional ALRE MAFs.

c. Block 38 (First Contact/Maint. Man): Enter the name of the outside activity that completed the work, i.e., VRT, etc. Do not attempt to obtain a signature for accomplished work.

d. Final QA Inspected by:

(1) For maintenance actions where the outside activity provides all parts, this block is used by ship's force to indicate final inspection of the work and receipt of components/contract numbers installed and NDI documentation. For work completed by an outside maintenance activity, this block does not represent a total quality assurance effort on the part of ship's force. The signature of the quality assurance inspector (QAI) or collateral duty quality assurance inspector (CDQAI) in this block merely signifies that the equipment was functioned and the component or system operates as required.

(2) For maintenance actions where ship's force removes the equipment, reinstalls the equipment, or functions the equipment, the QAI/CDQAI signature signifies that all documentation of the outside activity's work is complete/correct (including required documentation for non-destructive inspection (NDI), hydrostatic testing, etc.) and that all work accomplished by ship's force has received the applicable inspections by V-2 QA.

e. Start/stop times: These blocks are used to assist the work center supervisor in determining total ship's force man-hours expended for the job. This total, including any maintenance support (MS) man-hours, will be entered in Block 30 (S/F MHRS).

NOTE

Do not enter any man-hours expended by outside maintenance activities in the start/stop times blocks.

f. Block 35 (Remarks/Description): A concise narrative description of the completed maintenance action shall be entered here.

g. The material control section of the ALRE MAF will not normally be utilized when documenting accomplishment of outside maintenance activity work. The ALRE tool control section will be completed only when ship's force personnel check out tools from the work center or central tool room.

NOTE

Ship's force personnel should obtain contract numbers, etc., from the outside maintenance activity for equipment that was installed, modified, or repaired. Enter this information or edit existing records, as appropriate, in the Installed/Discrepant Parts List (Shipboard Installed Parts database) to ensure that an accurate record of installed equipment is kept onboard and is forwarded to NAVAIRWARCENACDIV Lakehurst.

NOTE

If an adequate number of personnel cannot be maintained in order to execute proper QA of ship's force and shipyard maintenance actions, the type commander shall immediately be notified.

Note: Task depicted horizontally occurs at approximately the same time.				
Work Center	Maintenance Control	Quality Assurance	Maintenance Support	Material Control
1a. Discrepancy occurs. Equipment is down. Notify M/C. Place MAF Card on VIDS Board.	1b. Notified of problem. Notify Air Boss. Alert QA and MS (as applicable). Obtain JSN and place MAF Card on VIDS Board.	1c. Notified of problem (as applicable). Place MAF Card on VIDS Board	1d. Notified of problem (as applicable) Place MAF Card on VIDS Board.	
2b. Assign Workers. Initiate Tag Out procedures (as applicable). Obtain tools, start job. When notified by M/C. Order parts as required.	2a. Notify W/C to start job. Issue Red "Danger" Tags (as applicable).			2c. Requisition parts
3c. Receive parts. Record contract numbers for MAF entry.		3b. Screen parts in I/DPL prior to installation.		3a. Receive parts. screen I/DPL. Notify W/C to pick up parts. Notify M/C NOTE: ALRE Maint. Officer/ Chief shall initial contract number block of ALRE MAF for all UNKNOWN contract number entries.
4a. Work complete. Functional checks performed, as required. M/C notified.	4c. Maint. Officer/Chief witnesses maintenance Equipment placed in UP Status. Notify Air Boss.	4b. Inspect job and witness Functional checks, as required	4d. Job complete. Document MS man-hours.	
5a. MAF completed, signed, and forwarded as appropriate. MAF Card processing follows normal flow.	5c. MAF/MAF Card processing follows normal MAF flow.	5b. MAF signed. MAF/MAF Card processing follows normal flow.		

Figure 9-9 Emergency MAF Procedures

Chapter 11 - Quality Assurance

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Chapter 11

Quality Assurance

11.1 Quality Assurance

11.1.1 Quality Assurance (QA) is a planned and systematic pattern of actions necessary to provide confidence that an item or product conforms to established technical requirements.

11.1.2 The QA work center (W/C) is organized with a relatively small group of highly skilled personnel. These permanently assigned personnel, under the ALRE maintenance officer, are responsible for conducting and managing the QA program of the division. The maintenance personnel assigned to QA are known as quality assurance inspectors (QAIs). Additionally, personnel assigned to other work centers may be designated to perform certain inspection functions. Figure 11-1 depicts the standard ALRE QA W/C organization.

11.2 Concepts of Quality Assurance

11.2.1 The QA concept is fundamentally that of the prevention of the occurrence of defects. The concept embraces all events from the start of the maintenance operation to its completion and is the responsibility of all personnel. The achievement of QA depends on prevention, knowledge, and special skills. These factors are described as follows:

a. Prevention relies on the principle that it is necessary to preclude maintenance failure. This principle extends to safety of personnel, maintenance of equipment, and virtually every aspect of the total maintenance effort. Prevention is concerned with regulating events rather than being regulated by them.

b. Knowledge is derived from factual information. Data collection and analysis are a means of acquiring this knowledge.

c. Special skills, not normally possessed by production personnel, are required of a staff of trained personnel for the analysis of data and supervision of the QA program.

11.2.2 The terms inspection and audit, as used in this instruction have separate and distinct meanings and should be used accordingly. The following definitions are provided to clarify the conceptual differences in these terms:

a. Inspection is the examination/testing of supplies (including raw materials, documents, data, components, and

assemblies) and services to determine whether they conform to technical requirements.

b. Audit, as it applies to the QA program, is a periodic or special evaluation of details, plans, policies, procedures, products, directives, and records.

11.2.3 The QA program provides a systematic and efficient method for gathering, analyzing, and maintaining information on product quality and on the source and nature of defects and their impact on the current operation. It permits decisions to be based on facts rather than intuition or memory. It provides comparative data that will be useful long after the details of the particular time or events have passed. Its objective is to readily pinpoint problem areas in which management can:

a. Improve the quality, uniformity, safety, and reliability of the total maintenance effort.

b. Improve the work environment, tools, and equipment used in the maintenance effort.

c. Eliminate unnecessary man-hour and dollar expenditures.

d. Improve training, work habits, and procedures of maintenance personnel.

e. Increase the accuracy and value of reports and correspondence originated by maintenance personnel.

f. More effectively disseminate pertinent technical information.

g. Establish realistic material and equipment requirements in support of the maintenance effort.

h. Support the foreign object damage (FOD) prevention and other special programs.

11.2.4 Teamwork must be achieved before benefits can be obtained from a QA program. Individuals in the organization must use critical judgment in the course of their daily work. Judgment plays a vital part in the quality of the work performed. QA techniques supply each person, from the worker to the commanding officer, with information on actual quality standards, goals, and achievements. The resultant recorded knowledge can encourage the best efforts of all personnel.

11.3 Responsibility for Quality in Maintenance

11.3.1 The commanding officer is ultimately responsible for the inspection and quality of material under his or her cognizance. Command policy and emphasis will establish high standards of quality in a maintenance organization.

11.3.2 Attaining quality in maintenance and the prevention of maintenance errors is an all hands task that can only be accomplished through positive leadership, proper organization, and a complete understanding of responsibilities by each individual in the division. The QA program requirements, as well as QA functions and responsibilities stipulated in this instruction, provide a sound basis for conducting an effective ALRE QA program.

11.3.3 QA is a staff function, which requires both authority and assumption of responsibility. Direct liaison between QA and the work centers is a necessity and must be energetically exercised. Although the QA supervisor is responsible to the ALRE Maintenance Officer for the overall quality of maintenance within the division, work center supervisors are responsible for ensuring that required inspections are conducted and that quality workmanship is attained. The foremost responsibility of the ALRE QA program is the assurance of proper maintenance actions.

11.4 Quality Assurance Responsibilities

11.4.1 Specific program responsibilities assigned to the QA supervisor are to:

a. Maintain the central technical publications library for the division, including technical directives (TDs); control classified technical publications for the division and ensure that each work center receives all publications that are applicable and that they are kept current and complete.

b. Establish qualifications/requirements for QAIs/CDQAIs (collateral duty quality assurance inspectors) and CDIs (collateral duty inspectors); review the qualifications of personnel nominated for these positions, and endorse nominations to the commanding officer and air officer via the chain of command. A current list of all QAIs/CDQAIs and CDIs will be issued to all W/Cs and include the type of equipment each may inspect.

c. Recheck qualifications of CDIs by monitoring them at a minimum quarterly during scheduled or unscheduled maintenance tasks. Documentation of monitoring must be retained for a period of 2 years within the QA Branch.

d. Ensure all work guides, check-off lists, check sheets, MRCs, etc. used to define/control maintenance, are complete and current prior to issuing to crews/individuals.

e. QA shall monitor and review all Requests for Departures from Specifications, Requests for Engineering Information (REIs), Hazardous Material Reports (HMRs), Technical Publications Deficiency Reports (TPDRs), Product Quality Deficiency Reports (PQDRs), Engineering Investigation Request (EIs), to ensure that they are accurate, clear, concise, and comprehensive prior to submission.

f. Monitor use of PME to ensure compliance with calibration intervals and safety instructions.

g. Perform inspection of all maintenance equipment and facilities to ensure compliance with fire and safety regulations and existence of satisfactory environmental conditions. Additionally, monitor proper training, qualification, and licensing of equipment operators and drivers.

h. Provide a continuous training program in techniques and procedures pertaining to the conduct of inspections. When directed or required, provide technical task forces to study trouble areas and submit recommendations for corrective action.

i. Use information from the ALRE Maintenance Action Form (MAF) in developing discrepancy trends to identify failure areas or other maintenance problems.

j. Review periodic inspection records, and note recurring discrepancies requiring special action.

k. Maintain liaison with TYCOMs, Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV) Lakehurst, Carrier and Field Service Unit (CAFSU), and other available field technical services. Establish and maintain liaison with other maintenance and rework activities to obtain information on ways for improving maintenance techniques, quality of workmanship, and QA procedures.

l. Ensure personnel performing QA functions use inspection equipment such as mirrors, magnifying glasses, comparators, tensiometers, pressure gauges, etc., as required. Ensure that maintenance personnel have such equipment available, in operating condition and calibrated.

m. Ensure that established standard procedures are observed for conducting PMS actions.

n. Ensure that the configuration of equipment and components is such that all essential modifications have been incorporated. This requires checking equipment records with the current service bulletin and services change Zero Bulletin, Ships Equipment File (SEF), which provides required configuration information.

o. Ensure an inspection is conducted on all equipment received for use, returned for repair, or held awaiting repair to verify its material condition, identification, packaging, preservation, and configuration are satisfactory; and when applicable, that shelf-life limits are not exceeded.

p. Ensure that prior to the installation of an ALRE component, part and contract numbers are validated against the I/DPL database to ensure the installation of non-discrepant parts. Also ensure that contractor, VRT personnel, and all repair activities are briefed on and utilize the ALRE I/DPL Program. Ensure maintenance documentation (e.g., MAF) procedures support the program objective.

NOTE

Ensure contract numbers of parts installed are annotated on the MAF when it is completed. The ALRE Maintenance Officer/Maintenance Chief shall initial contract number block of ALRE MAF for all UNKNOWN contract number entries.

q. Review all incoming technical publications and directives to determine their applicability to the division.

r. Prepare or assist in the preparation of Maintenance Instructions (MIs) to ensure that QA requirements are included.

s. Develop and administer appropriate tests for QA nominees. Ensure currency and integrity of all testing materials.

t. The QA supervisor is assigned the overall responsibility for the division safety program as outlined in paragraph 11.9.3.1.

11.4.2 To comply with assigned responsibilities, QA will perform the inspections identified in the following paragraphs:

11.4.2.1 Mandatory QA inspections as specified in the MRCs, TDs, and MIs.

11.4.2.2 Those inspections required to be conducted by QA personnel during/upon the completion of a maintenance action.

11.4.2.3 ALRE Quality Assurance Cards are provided for certain preventive and corrective maintenance tasks that, if improperly performed, could cause equipment failure or jeopardize the safety of personnel. They contain guidelines for conducting QA inspections. QAI level inspections are performed during/after task performance, using the following criteria:

a. If the proper performance of a task cannot be determined after the task is completed, a QA inspection shall be required while the task is being performed. Work shall not proceed past the inspection point indicated on the task MRC until the QA inspection has been completed. For these inspections, the notation QA REQUIRED appears on the MRC containing the task.

b. If the proper performance of a task can be determined by a visual inspection after the task is completed, a QA inspection is required after the task completion.

11.4.2.3.1 QA cards shall be maintained and used by QA personnel. Upon receipt of a new QA card, the enclosed feedback form shall be filled out and forwarded to NAVAIRWARCENACDIV Lakehurst to acknowledge receipt of the card(s). Additionally, fleet units shall send a feedback report, indicating receipt, to their respective TYCOM.

11.4.2.3.2 Recommended changes/corrections shall be reported by ALRE CAT I or CAT II TPDR in accordance with paragraphs 11.10.5.2 and 11.14.1.3.

11.4.2.3.3 NAVAIRWARCENACDIV Lakehurst (Code 3.3.1) will manage the ALRE QA MRC program and issue cards annually and as they are updated.

11.4.3 Procedures shall be established within each work center to ensure that the QA inspection requirements are complied with during all maintenance evolutions. In developing procedures, inspections normally fall into one of the following categories:

a. Receiving or screening inspections apply to material, components, parts, equipment, logs/records, and documents. These inspections are normally conducted by CDIs to determine the condition of material, proper identification, maintenance requirements, disposition, and correctness of accompanying records, documents, etc.

b. In-process inspections are specific QA functions that are required during the performance of maintenance requirements/actions in cases where satisfactory task performance cannot be determined after the task has been completed. These

inspections, when designated, include witnessing application of torque, functional testing, adjusting, assembly, servicing, installing, etc.

c. Final inspections are specific QA functions performed following the completion of a task or series of tasks.

d. In-process and final inspections are normally conducted by CDIs, however, QAIs shall conduct in-process and final inspections of all tasks on all which require the equipment to have a functional check. Additionally, QAIs will perform inspections of any other tasks as determined by the ALRE maintenance officer. It must be emphasized that only those personnel designated as QAI/CDQAIs and CDIs are authorized to sign as inspector for a QA inspection requirement. While not all QA inspections conducted during the various phases of maintenance require a signature, all specified QA inspections are conducted, witnessed or verified by designated QA personnel.

11.4.4 The INSPECTED BY block on all MAFs are signed by QA inspectors. Only the QA inspector(s) actually inspecting the work for proper standards will sign inspection documents.

11.4.5 Billet descriptions shall be prepared for QA personnel to ensure that all QA functions and responsibilities are assigned. Billet descriptions shall assign specific programs that are managed and monitored by each QA.

11.5 Quality Assurance Inspectors

11.5.1 QAIs perform the following functions:

a. Review incoming technical publications and directives to determine their application to the division.

b. Prepare or assist in the preparation of MIs to ensure QA objectives and requirements are defined.

c. Participate as members of technical task forces to investigate trouble areas and provide recommendations for corrective action.

d. Verify the certification of maintenance personnel; i.e., welder, tow tractor, or forklift.

e. Review qualifications of personnel nominated to become CDIs (or CDQAIs) and provide recommendations as appropriate.

f. Assist in the preparation of ALRE Discrepancy Reports (see paragraph 11.10.3), PMS Feedback Reports, and change recommendations to technical manuals. Review all report entries for adequacy and correctness prior to distribution.

g. Provide technical assistance to CDIs and maintenance personnel who are required to make decisions concerning QA.

h. Review ALRE Discrepancy Reports, PMS Feedback Reports, and change recommendations to technical manuals to determine discrepancy trends and specific problem areas relative to their areas of responsibility.

i. Conduct in-process and final inspections of tasks that require certification by QAIs/CDQAIs (e.g., functional check of A/G). Ensure that each QA inspection includes an examination of the work area for sources of potential FOD.

j. Monitor calibration status of equipment/tools in work centers.

k. Develop discrepancy trends and such charts/graphs that are necessary to depict quality performance.

l. Maintain liaison with TYCOM, NAVAIRWARCENACDIV Lakehurst, CAFSU and other field technical services. Establish and maintain liaison with other maintenance and rework activities to obtain information for improving the maintenance techniques, quality of workmanship, and QA procedures.

m. Develop checklists for auditing work centers, specific maintenance programs, and processes that require monitoring by QA.

NOTE

No QAI may inspect his/her own work and sign as an inspector.

11.5.2 All personnel being considered for selection as QAIs should meet the following qualifications:

a. Be senior in grade and experience, at pay grade E-6 or above, with a well-rounded maintenance background. See paragraph 11.6.2 for additional information.

b. Have fully developed skills and experience and be technically qualified in fields under their cognizance.

c. Be able to research, read, and interpret drawings, technical manuals, and directives.

- d. Be able to write with clarity and technical accuracy.
- e. Be stable and excellent in performance.
- f. Be motivated and have personal desire to acquire greater knowledge of their technical specialty.
- g. Be observant, alert, and inquisitive.
- h. Ability to work with others.
- i. Successfully qualify by passing a test administered by the QA branch.

11.5.3 The QA supervisor shall ensure that personnel assigned to perform QA functions receive continuous training in inspecting, testing, and quality control methods specifically applicable to their area of assignment. They will also ensure that QAIs receive cross training to perform those QA functions not in their assigned area. This training should include local training courses, on-the-job training (OJT), rotation of assignments, and Personnel Qualification Standards (PQS). QAIs shall have successfully completed the NAMTRAGRUDET (Norfolk and San Diego) ALRE Quality Assurance Administration course (C-670-2017).

11.5.4 QAIs shall be designated in writing by the Commanding Officer. The ALRE Quality Assurance Inspector Recommendation/Designation Form (figure 11-2) shall be used for this purpose.

11.6 Collateral Duty Quality Assurance Inspectors (CDQAIs)

11.6.1 When shortages of skills or manpower preclude the assignment of a QAI, a qualified individual within an appropriate work center may be designated a CDQAI. CDQAIs must meet the same criteria as QAIs, including designation in writing by the Commanding Officer, and will have the same authority as QAIs, but remain part of the work center organization. CDQAIs are primarily assigned to meet duty and/or in-port workload requirements, and are not assigned specific responsibility for programs monitored/managed by QA. CDQAIs shall perform QAI-level inspections only when tasked to do so by the ALRE maintenance officer, Maintenance Control Supervisor or QA Supervisor. Tasking shall be limited to specific maintenance events.

NOTE

No CDQAI may inspect his/her own work and sign as an inspector. No CDQAI may perform in a QA capacity and also sign as the W/C supervisor on the same job.

11.6.2 Should it become necessary to assign an individual below the grade of E-6 as a CDQAI to cover a given skills/manpower shortfall a letter shall be submitted to the respective Type Commander requesting approval. Comprehensive information surrounding the shortfall and complete justification must be provided. Assignment of an individual below the grade of E-6 as a CDQAI shall not normally exceed a period of 90 days, however Type Commanders may, at their discretion, approve greater time periods. These occurrences might be necessary to coincide with availabilities that exceed 90 days. The authorized period will commence on the date of the official correspondence response from the TYCOM, unless otherwise stated in said correspondence. In no case shall an individual below the grade of E-5 be appointed as a CDQAI.

11.7 Collateral Duty Inspectors (CDIs)

11.7.1 CDIs assigned to the work centers are to inspect all work and comply with the QA inspections required during all maintenance actions performed by their respective work centers. They will be responsible to the QA supervisor when performing these functions. CDIs will check all work in progress, and will be familiar with the provisions and responsibilities in the various programs managed and monitored by QA.

NOTE

No CDI may inspect his/her own work and sign as an inspector. No CDI may perform in a QA capacity and also sign as the W/C supervisor on the same job.

11.7.2 QA will establish minimum qualifications for personnel selected for CDI. Work center supervisors are responsible for ensuring that sufficient qualified personnel are nominated for CDI to comply with QA inspections required during all maintenance actions. Due to the critical role of the CDI, it is imperative that branch officers, group and work center supervisors carefully screen all candidates for these assignments. CDIs will be required to be PQS qualified and to demonstrate their knowledge and ability on the particular type equipment by successfully passing a test that is locally prepared and administered by QA.

11.7.3 CDIs shall be designated in writing by the air officer. The ALRE Quality Assurance Inspector Recommendation/Designation Form (figure 11-2) shall be used for this purpose.

11.8 Quality Assurance Programs

11.8.1 The QA Management Program includes continuous collection and distribution to cognizant personnel of all messages, letters, instructions, and other information concerning programs being

managed. Programs assigned to QA for management include, but are not limited to:

- a. QA audit program.
- b. Technical Publication Library (TPL).
- c. Safety programs including electrical safety.
- d. Foreign Object Damage (FOD).
- e. Tag Out Program.
- f. Calibration Program.
- g. Tool Control Program.
- h. QA Standards and Qualification Program.

11.8.2 MIs shall be prepared to carry out internal procedures and methods of administering specific programs and processes assigned for management. MIs are used to issue technical information and local policy of a sustaining nature. They direct efforts of QAIs, CDQAIs, CDIs, and other maintenance personnel. MIs shall be prepared in standard Navy directives format as prescribed in SECNAVINST 5215.1C. A sample of the format is in figure 11-3.

11.8.3 QA shall prepare an audit MI, which describes the specific functions, required to monitor each of the QA managed programs. Checklists used to monitor/audit work centers and maintenance programs shall be included as part of the MI governing that program. The QA supervisor is responsible for ensuring that all appropriate QA elements are included in these instructions, including the applicable audit checklist. Audits are one of the tools used in program however; continuous attention is required to effectively manage program performance.

11.8.4 The originals of all MIs will be maintained in the CTPL. A numbering system shall be established to provide file control (e.g., 1-01, 2-01). A master MI list shall be prepared and maintained by the central TPL. It shall include the MI number, title, effective date, and latest change date (if any). A copy of this list shall be held by each work center, and updated every 90 days.

11.8.5 MIs shall be reviewed for currency/validity on the MI anniversary date. The review shall be conducted jointly by the cognizant work center and QA.

11.9 Quality Assurance Program Management

11.9.1 Quality Assurance Audits. QA audits are essential elements of an effective QA program. Audits provide an evaluation of performance and program compliance throughout the division. They serve as an orderly method of identifying, investigating, and correcting deficiencies on a scheduled and unscheduled basis. Audits are also used to monitor those specific maintenance programs and processes assigned to QA for management.

11.9.1.1 Audits fall into the following three categories:

- a. Work center audit.
- b. Special audit.
- c. Type Commander audit.

11.9.1.2 Work center audits are conducted quarterly to evaluate the overall quality performance of each work center. As a minimum, the following applicable items are evaluated:

- a. Personnel and skills.
- b. Technical publications.
- c. Maintenance Instructions (MIs).
- d. Adherence to directives, procedures, and inspections.
- e. Adequacy and availability of process, test, and inspection procedures.
- f. Availability and calibration status of precision measuring equipment (PME).
- g. Proper use of PME.
- h. Certification of personnel performing special processes such as welding, etc.
- i. Handling, packaging, protection, and storage of material.
- j. Cleanliness and condition of spaces.
- k. Compliance with fire, safety and electrical safety regulations.

l. Configuration of components, equipment, and accuracy of associated logs and records.

m. Equipment logs and records.

n. Material condition/Corrosion Control of equipment.

o. FOD Prevention Program compliance.

p. Tool Control Program compliance.

q. TAG OUT Program compliance.

11.9.1.3 Special audits are conducted to evaluate specific maintenance tasks, processes, procedures, and programs. These audits provide a systematic, coordinated method of investigating known deficiencies, evaluating the quality of workmanship, and determining the adequacy of and adherence to applicable technical publications/instructions. The ALRE Maintenance Officer or QA supervisor on an as required basis normally directs conducting special audits.

11.9.1.4 Audit forms for each work center, with appropriate checklists, are developed by QA.

11.9.1.5 Upon completion of an audit, the findings are reviewed with the work centers involved and reports of the findings, with recommendations when required, are submitted to the ALRE Maintenance Officer. Records of audits are maintained for 2 years in accordance with SECNAVINST 5212.5D.

11.9.1.6 Adequate follow up procedures shall be established to ensure that discrepancies found during a QA audit are resolved. Attention from all levels within the V-2 division organization is essential.

11.9.1.7 Type Commander ALRE Maintenance Management Teams will visit each ship at least once during the work-up cycle and will audit the ALRE QA program prior to deployment.

11.9.2 Technical Publications Library (TPL) The TPL serves two important functions. It provides a central source of up-to-date information for the use of all personnel in the performance of their work, and it is an excellent source of reference information to facilitate personnel training and individual improvement. To perform these functions properly, the TPL must contain at least one copy of all publications affecting the assigned equipment.

11.9.2.1 Management of the TPL is a function of QA. This

function includes the determination of technical manuals, interim rapid action changes (IRACs), rapid action changes (RACs), repair procedures, technical directives, etc., required to support the division, receipt and distribution control of these manuals, as well as the responsibility for ensuring manuals are updated throughout the division. Detailed information for establishing and operating a TPL are contained in NA 00-25-100 (NOTAL).

11.9.2.2 Each activity that has established a TPL shall designate a Central Technical Publications Librarian (CTPL). Personnel assigned as the CTPL must receive indoctrination and continuous training in library operation. This training includes OJT as well as formal schooling.

11.9.2.3 Each work center that contains a dispersed library shall assign a Dispersed Technical Publication Custodian (DTPC) who will be responsible for the storage, update and user availability of the publications issued to them. The training of DTPCs is a responsibility of the Central Technical publications Librarian and the work center supervisor/Division Officer. Each DTPC shall be recommended jointly by the appropriate work center supervisor/Division Officer and designated in writing by the ALRE Maintenance Officer.

11.9.2.4 For continuity, effective operation and adequate training, personnel assigned to the CTPL should be retained in the billet a minimum of 1 year. Additionally, personnel assigned as a DTPC should be retained for a minimum of 6 months.

11.9.2.5 When an activity is unable to locate the applicable COMNAVAIRSYSCOM approved technical publication, or concludes that such a publication does not exist, that activity shall send an assistance request letter, via the chain of command, to: Commanding Officer, Naval Air Technical Data and Engineering Service Command (NATEC), Code 3.3.A, San Diego, CA 92135-7031, with a copy to COMNAVAIRSYSCOM (PMA251) and NAVAIRWARCENACDIV Lakehurst (Code 3.3.1). In addition to a brief explanation of the problem, previous resolution attempts, and a point of contact, the following information shall be included if applicable:

- a. Item nomenclature
- b. Part number (P/N)
- c. National stock number (NSN)
- d. Applicable ALRE system application
- e. Serial number.

f. Manufacturer's name or the contractor and government entity (CAGE) code

g. Identification of the next higher assembly (for example, nomenclature, P/N, NSN)

11.9.2.6 NATEC shall respond directly to the originator, with copies to other involved commands, within 30 calendar days of receiving the request for assistance.

11.9.2.7 Technical Directives (TDs) provide information on the proper administration, technical and/or operational use of equipment. TDs also provide technical alteration specifications to install, remove, reconfigure, and repair equipment. The applicable Zero Dash bulletins provide a complete numerical index and current status of the TDs.

11.9.2.8 Detailed information concerning the ordering of technical publications and TDs is contained in NA 00-25-100 (NOTAL). Requisitions are submitted to the appropriate inventory control point listed in the Navy Stock List of Publications and Forms (NAVSUP P-2002) (NOTAL).

11.9.3 Division Safety Program. This program seeks to identify and eliminate hazards wherever and whenever they are found. Effectiveness and safety result when properly trained personnel use properly designed equipment in accordance with established procedures under competent and persistent supervision. It requires active daily participation by all personnel to obtain desired results. Any safety program must address the aviation, shipboard, and industrial aspects of safety.

11.9.3.1 The QA supervisor is assigned the overall responsibility for the V-2 division safety program. The intent of this program is not to conflict with any portion of the ship's overall safety program but to assist in the coordination of the total safety effort. The following responsibilities are included:

- a. Disseminating appropriate safety posters and literature.
- b. Reporting any hazards, mishaps, and unsafe practices in the division.
- c. Conducting training and safety meetings within the work centers.
- d. Coordinating with the ship's safety officer.

e. Participating in the ship's safety surveys and stand-downs.

11.9.4 Foreign Object Damage (FOD) Program. QA will ensure that:

a. There is compliance with all instructions pertaining to FOD prevention issued by the FOD prevention officer.

b. All work centers have instituted procedures that comply with applicable instructions and the FOD prevention/safety relationship is adequately addressed. Evaluation of FOD prevention measures shall be included in all special and planned work center audits.

c. Maintenance methods and procedures support the FOD prevention program.

d. The ship's FOD prevention officer, the aircraft handling officer (ACHO), is made aware of FOD related problems.

e. Contractor/field maintenance teams are briefed regarding the command's FOD prevention program requirements and that discrepancies are to be reported to the FOD prevention officer.

11.9.5 Tag Out Program. QA will ensure that:

a. Tag-out procedures are verified in accordance with current directives.

b. All work centers have instituted procedures that comply with OPNAVINST 3120.32C and other applicable instructions are adequately addressed.

11.9.6 Calibration Program.

During daily walk-through, routine audits, and while conducting inspections of all maintenance actions, QA will verify that all equipment/components are in calibration and are in safe working condition. QA will ensure that cognizant work centers comply with procedures established for the induction of equipment/components that require calibration.

11.9.7 Tool Control Program. QA will ensure that:

a. Tool control procedures are verified as directed by the ALRE Maintenance Officer and during work center audits.

b. When work is to be performed by contractor/field maintenance teams, the division's tool control standard is

maintained. A QAI will brief them upon their arrival regarding tool control responsibilities.

11.9.8 Quality Assurance Standards and Qualification Program. To maintain proper quality inspections of maintenance, inspectors must be trained, tested and indoctrinated with the highest of standards. All personnel nominated to perform inspection of ALRE Maintenance must meet the requirements specified in paragraphs 11.5.2, 11.5.3, and 11.7.3.

11.9.8.1 The TYCOM standardized ALRE Job Qualification Requirements (JQR) for QAI, CDQAI and CDI will be utilized to assist in the effective and proper qualification of ALRE inspectors. Quality inspections require an aggressive continuous training program to ensure inspectors maintain quality in maintenance and prevention of maintenance errors.

11.10 ALRE Discrepancy Reporting Program

11.10.1 Introduction

a. This program is the method by which hazardous deficiencies in material and publications, substandard workmanship, and improper QA procedures are reported.

b. COMNAVAIRSYSCOM has provided a NAVAIR discrepancy reporting (NAMDRP) website enabled capability to Organizational level and Intermediate level maintenance activities to create, transmit, and track Engineering Investigation (EI) requests, Hazardous Material EI (HMR) requests and Product Quality Deficiency Reports (PQDR). Requests will be routed to the assigned Fleet Support Teams (FSTs) and automatically routed to other concerned activities. The NAMDRP website enabled capability also permits maintenance activities to receive reports and other information, conduct technical dialog with the FST technical representative, and verify status of an EI or PQDR. This website is accessible at <https://namdrp.navair.navy.mil> by all organizations with a role in the EI or PQDR process.

c. COMNAVAIRSYSCOM has also established a discrepancy-reporting (NAMDRP) Clearinghouse to oversee the EI and PQDR processes and interface between the requesting activity and the Fleet Support Teams (FSTs) for all COMNAVAIRSYSCOM activities. The function of the NAMDRP Clearinghouse is to monitor the performance of the EI and PQDR processes, and assist Fleet activities resolve problems with specific discrepancy report requests. The NAMDRP Clearinghouse will operate up to 16 hours each working day to respond to or expedite solutions to fleet

problems or concerns. NAMDRP Clearinghouse personnel can be contacted through the NAMDRP website at www.namdrp.navair.navy.mil.

d. It is the policy of this program to expeditiously resolve reported discrepancies relating to ALRE equipment. By utilizing prepaid commercial express shipping (e.g. FedEx) integrated on the NAMDRP website, EI and PQDR exhibits can usually be delivered to the investigation activity within 3 days CONUS and 7 days non-CONUS.

11.10.2 Exceptions to the ALRE discrepancy reports are:

a. Changes or corrections to carrier Naval Air Training and Operating Procedures Standardization or tactical manuals are reported in accordance with OPNAVINST 3710.7T (NOTAL) using OPNAV 3710/6.

b. Deficiencies resulting from incorrect packaging, preservation, marking, handling (as reported by supply activities), or deficiencies in shipment which are the result of overage, shortage, expired shelf life, or misidentified material, are reported in accordance with SECNAVINST 4355.18 (NOTAL).

c. Locally procured material found to be deficient by the procuring activity or station is reported in accordance with SECNAV 4855.3A.

d. Deficiencies in letter type instructions and notices are reported by letter to the sponsor.

e. Incorrect source, maintenance, and recoverability (SM&R) codes are reported in accordance with NAVAIRINST 4423.11 (NOTAL).

f. Recommendations for improvements in procedures which are not a result of incorrect information contained in publications are reported by letter to Naval Air Technical Data and Engineering Service Command (NATEC) Code 3.3.A. Provide an info copy to NAVAIRWARCENACDIV Lakehurst, Code 3.3.1.

11.10.3 Program Management

11.10.3.1 QA is responsible for managing the ALRE Discrepancy Reporting Program. Reports covered by this program are the ALRE Product Quality Deficiency Report (PQDR), ALRE Hazardous Material Report (HMR), ALRE Engineering Investigation (EI) Request, and ALRE Technical Publications Deficiency Report (TPDR). QA will assist the work centers in determining if one or more reports are needed for any maintenance problem or situation occurring in the activity.

They will also review all discrepancy reports to ensure they are accurate, clear, concise, and comprehensive prior to submission.

11.10.3.2 The ship's safety officer shall review all correspondence pertaining to ALRE-related aircraft, ground, flight, and flight related mishaps.

11.10.3.3 Correspondence, reports, or requests involving the management of ALRE discrepancy reports shall be reviewed by the ALRE Maintenance Officer.

11.10.4 Safety

11.10.4.1 All hands have a responsibility to be alert for defects and discrepancies having an adverse effect on safety and to properly report them via their chain of command.

11.10.4.2 Safety shall be the primary consideration when submitting the reports outlined in this chapter. If an incident meets the criteria for an ALRE HMR and an ALRE EI, the hazard and the EI request should be reported in a single priority request on the NAMDRP website or a single priority message in the format shown in Figure 11-8. Submission through the NAMDRP website is preferred and should be utilized when accessible. If a Technical Publication Deficiency Report meets the criteria for a CAT I TPDR, it should be reported via priority message.

11.10.5 Reporting Procedures

NOTE

Submission of an ALRE Discrepancy Report is mandatory when the criteria of paragraph 11.11.2.1, 11.12.3.1, 11.13.3, or 11.14.1.1 is met. A Casualty Report (CASREP) may be required in addition to, but not in lieu of, an ALRE Discrepancy Report.

11.10.5.1 Submit ALRE PQDRs, ALRE HMRs, ALRE EI requests and all combination ALRE discrepancy reports via the NAMDRP website to NAVAIRWARCENACDIV, Lakehurst, the Fleet Support Team (FST) for ALRE. If submitting by naval message, use the message format shown in Figure 11-8 and submit to AIG ONE THREE EIGHT EIGHT FIVE. In the remarks section of the message state, "THIS MSG ACTION FOR NAVAIRWARCENADLKE. INFO ALL OTHERS." AIG ONE THREE EIGHT EIGHT FIVE shall not be used in the info addressee line of the message.

11.10.5.2 Submit CAT I ALRE TPDR messages to AIG ONE THREE EIGHT EIGHT FIVE and NAVAIRTECHSERVFAC (NATEC) (Code 3.3.A) for dual action. AIG ONE THREE EIGHT EIGHT FIVE shall not be used in the info addressee line of the message. Submit CAT II ALRE TPDRs

(OPNAV 4790/66) to the NAVAIRTECHSERVFAC (NATEC) (Code 3.3.A) and with an info copies to the originator's type commander and the FST.

NOTE

For ALRE TPDRs involving ALRE QA cards, NATEC will not be a recipient of the report. The report action addressee will be NAVAIRWARCENACDIV Lakehurst (Code 3.3.1).

11.10.5.3 A report control number (RCN) will be assigned to each ALRE discrepancy report. RCNs will be assigned sequentially throughout the calendar year, without regard for the type of report: for example, 8001 is the first report and is an ALRE HMR, 8002 is the second report and is a CAT I ALRE PQDR, 8003 is the third report and is an ALRE TPDR, and 8004 is the fourth report and is another ALRE HMR. The RCN shall not contain any spaces but will contain hyphens; for example, V03300-01-8001. The RCN is composed of the following elements:

a. Element (1) is the service designator code applicable to the originating activity, either R or V. These codes are the only correct service designator codes for ALRE Discrepancy Reports. V is for Navy and Marine Corps aviation Atlantic Fleet operating forces, and R is for Navy and Marine Corps aviation Pacific Fleet operating forces.

b. Elements (2) through (6) are the unit identification code (UIC) of the originating activity, for example 03300.

c. Elements (7) and (8) are a two-character identification of the calendar year, for example, 01. There will be a hyphen directly preceding and following the two-character year.

d. Elements (9) through (12) are the locally assigned control number. These numbers are sequential beginning with 8001 each calendar year.

11.10.5.4 Reference the RCN and message date-time-group of the originating activity on all supplemental correspondence. Include shipping information and the Investigation Control Number (ICN) assigned by the FST.

11.10.5.5 Retain a copy of the reports for 2 years in accordance with SECNAVINST 5212.5D.

NOTE

ALRE HMRS, ALRE TPDRs, ALRE PQDRs, ALRE EI requests and combined reports prepared as a result of an aircraft mishap are not privileged. Exercise extreme care to ensure that these reports and

requests do not contain privileged information. Refer to OPNAVINST 3750.6R (NOTAL).

11.10.5.6 ALRE discrepancy report submission criteria, precedence, and time limits are summarized in Figure 11-15.

11.10.6 Handling and Preparation of ALRE PQDR/HMR/EI Material.

11.10.6.1 The V-2 (ALRE) material control work center will hold the defective material until disposition instructions are received from the Fleet Support Team (FST) or directing authority. When disposition instructions are received from the FST, V-2 (ALRE) material control shall take the defective material to the supporting supply department for shipping.

NOTE

Defective material investigations are often closed without reaching a conclusion about why the component failed because the exhibit is lost prior to shipment or damaged due to improper handling or packaging.

NOTE

Any material released by the FST to be released to an authorized contractor's representative or shipped directly to a contractor's plant shall be processed through the supporting supply department. Supply can issue the material on a custody basis, only after receiving authority from the FST.

a. Maintain material in an AS IS condition, ensuring the ALRE Investigation Control Number (ICN) assigned by the FST appears on all documents, exhibits, and packaging. Whenever a hazardous condition is evident, request shipping instructions from the FST.

b. Take special care to cap/package material immediately upon removal from the system in such a manner as to prevent corrosion, contamination, or other damage that may contribute to confusion or loss of possible cause factors. Do not attempt any adjustments, disassembly, or perform any type of cleaning, externally or otherwise. If any adjustment, disassembly, or cleaning was done during a local investigation, a list of particulars describing the local investigation must accompany the material to the FST.

c. Forward samples of the fluid in clean, sealed, authorized containers. If contamination is suspected, annotate sample bottles accordingly.

NOTE

Hazardous material should be handled/packaged in accordance with OPNAVINST 5100.23F. Contact the supporting supply department for assistance.

d. Do not attempt to reassemble fragments of failed material. Wrap each fragment separately to prevent damage caused by relative movement. When feasible, forward associated accessories, components, or material suspected of contributing to the malfunction/mishap. Do not touch failed surfaces as this could mask failure data.

e. Ensure DD Form 2332 (figure 11-18) is attached to the exhibit. Also, provide a copy of the ALRE MAF (if applicable), appropriate copies of DD Form 1149 with a copy of the ALRE Discrepancy Report and all other supporting documents inside of the shipping container. QA shall ensure the ALRE MAF is marked with the ALRE Investigation Control Number (ICN) assigned by the FST and that ALRE PQDR, ALRE HMR or ALRE EI, as appropriate, appears in 3 inch red letters, in a manner not to obscure vital data.

NOTE

Exhibits shall be held 60 days by the originating point or until disposition instructions are received from an appropriate screening or action point. If after 60 days, shipping or disposition instructions have not been received, the originator shall conduct a follow-up with the appropriate screening or action point. Exhibits shall not be repaired within the 60-day holding time unless critical mission requirements dictate. In such instances, action should be initiated to retain evidence of the deficiency through photographs, testing, etc., which can be included with the ALRE discrepancy report.

11.10.7 Response to ALRE Discrepancy Reports

NOTE

Within 45 days after receipt of an ALRE discrepancy report, the ALRE screening activity shall provide feedback to the originating activity concerning status of any possible exhibit request. Feedback shall delineate any requirement for the originator to hold the exhibit material for a period exceeding the initial 60 days.

11.10.7.1 The originating point is an activity that finds a quality deficiency and reports it by ALRE PQDR, ALRE HMR, ALRE HMR/EI, or ALRE TPDR to the designated screening point. Figure 11-4 depicts the process flow for ALRE PQDRs. Processing for other ALRE discrepancy reports is similar.

a. The originator shall respond to all requests from screening, action or support points for additional information that may be necessary in the investigation of any ALRE discrepancy reports.

b. When a reply has not been received within the timeframes specified in paragraphs 11.11 through 11.14 for the applicable discrepancy report, the originating activity's ALRE QA will initiate follow-up action to the screening point via the NAMDRP website, priority message, routine message or naval letter, as appropriate. Submission through the NAMDRP website is preferred and should be utilized when accessible. At a minimum, information addressees/"copies to" for follow-up action will include COMNAVAIRSYSCOM (PMA251), and COMNAVAIRPAC (Code N433), COMNAVAIRLANT (Code N433).

11.10.7.2 The screening point is the activity that reviews the discrepancy report for proper category classification, validity, correctness of entries, accuracy, and completion of information addresses; determines and transmits the report to the cognizant action point; maintains an audit trail for each report; reviews PQDR closeout responses from action points; and collects, maintains, and exchanges report data. The primary screening point for ALRE equipment is the ALRE FST, NAVAIRWARCENACDIV Lakehurst, NJ. The screening point for NAVAIRSYSCOM publications is NATEC, Code 3.3.A. The screening point responsibilities are further broken down at NAVAIRWARCENACDIV, Lakehurst based on the type of report being submitted. These are outlined in the applicable report paragraphs, 11.11 through 11.14. Duties of the screening point for all type reports include the following:

a. The screening point shall forward an initial response, acknowledging receipt of the discrepancy report, to the originator within the time limits specified in paragraphs 11.11 through 11.14.

b. The screening point shall forward ALRE discrepancy reports to the appropriate action point within the time limits specified in paragraphs 11.11 through 11.14.

c. The screening points shall establish an audit trail for each ALRE Discrepancy Report forwarded to the action points for investigation. Additional guidance for screening points is provided in DLAR 4155.24/SECNAVINST 4855.5A.

d. Once the EI or HMR request or PQDR report has been screened and accepted, the screening point shall assign an Investigation Control Number (ICN) to the ALRE discrepancy report as follows:

(1) Request the deficient exhibit (if needed) from the originator (holding point) as soon as the need is determined, but not later than time prescribed for the particular report. The support point may be authorized to request the exhibit directly from the holding point.

(2) Use the EI Request/PQDR investigation control system for deriving control numbers shown in the following paragraphs:

```
WAFEI - ALRE - 0012 - 03R
| | | | | | |
| | | | | | |__Routine
| | | | | | |
| | | | | | |__2003
| | | | | | |
| | | | | | | Control Number
| | | | | | |
| | | | | | |__Type Equipment
| | | | | | |
| | | | | | |__Type Report (e.g. EI, PQDR)
| | | | | | |
| | | | | | |__NAVAIRWARCENACDIV Lakehurst
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(3) The first 3 elements are the ORG Code, as established in NAMS0 4790.A7065-01. The NAVAVNDEPOT identifier for NAVAIRWARCENACDIV Lakehurst is WAF.

(4) The next element, appended to the ORG Code is "EI" or "PQDR", followed by a dash (-).

(5) The next four characters are the system identifier (type equipment). ALRE will be used for launch and recovery systems equipment. This element is followed by a dash (-).

(6) The next four elements comprise the serial number. This number will be assigned sequentially throughout the calendar year (beginning with 0001) without regard for the type of report. This element is followed by a dash (-).

(7) The next two elements are the calendar year identifier beginning with "00" for calendar year 2000, and continuing in arithmetic progression with changes in calendar year.

(8) The last element, appended to the calendar year, is a request urgency indicator, that is, "R" for Routine, "S" for Safety, and "M" for Mishap related. This indicator will be based on the nature of the request as specified in the ALRE discrepancy report.

11.10.7.3 The action point is a focal point identified within each activity, responsible for resolution of a reported product deficiency including necessary collaboration with support points. For PQDR reports, the action point should be determined using material cognizance (COG) codes, i.e., 1H, 5R, 7E, 9G, etc. For EI, HMR and all combination requests, the action point is the applicable equipment FST engineer at NAVAIRWARCENACDIV, Lakehurst, NJ. For ALRE discrepancy reports, the action point shall:

- a. Investigate the reported deficiency.
- b. Ensure action is taken to provide disposition instructions for the deficient product.
- c. Carefully evaluate the need to request an exhibit. If the exhibit is essential in the investigation, request it from the report originator as soon as the need is known but no later than the time limits specified in paragraphs 11.11 through 11.14.
- d. In the case of ALRE PQDRs, determine if a contract warranty applies and initiate any additional special actions that are required.
- e. Determine if the same deficiency is currently under investigation or has been resolved because of a previous report.
- f. Forward an initial, interim or final response to the originator or screening point as applicable within the time limits specified in paragraphs 11.11 through 11.14.
- g. Additional guidance for action points is provided in DLAR 4155.24/SECNAVINST 4855.5A (NOTAL).

11.10.7.4 The support point is an activity that assists the action point, when requested, by conducting and providing results of a special analysis or investigation pertinent to the correction and prevention of a reported deficiency. The support point, when requested, shall:

- a. Conduct an investigation to determine the root cause(s) of the reported deficiency and the corrective actions necessary.
- b. Evaluate the need to request an exhibit.
- c. Provide an interim or final reply to the requesting action point within the time limits specified in paragraphs 11.11 through 11.11.

d. Additional guidance for support points is provided in DLAR 4155.24/SECNAVINST 4855.5A (NOTAL).

NOTE

Failure to meet the specified time limits does not relieve the requirement to process the ALRE Discrepancy Report. Activities will provide progress reports or request status reports as necessary to ensure timely completion of required action.

11.10.7.5 NAVAIRWARCENACDIV Lakehurst shall prepare a monthly summary/status report listing all new, open, and resolved (that month) ALRE discrepancy reports by type and category, and forward copies to COMNAVAIRSYSCOM, COMNAVAIRLANT, COMNAVAIRPAC, all CV/CVNs, NAVICP Philadelphia, NAVICP Mechanicsburg, NAVSAFECEN, and other concerned activities.

11.11 ALRE Hazardous Material Report

11.11.1 This report provides a standard method for reporting material deficiencies that, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities. Such incidents are reportable regardless of how or when the discrepant condition was detected.

NOTE

The ALRE HMR is not applicable for discrepancies related to new or newly reworked material. These discrepancies shall be reported using the ALRE PQDR (CAT I or CAT II, as applicable.)

11.11.2 Reporting Criteria. Originating activities shall prepare and submit ALRE HMRS in accordance with this instruction.

11.11.2.1 Submit an ALRE HMR or HMR/EI by priority request on the NAMDRP website or a priority precedence message (submission through the NAMDRP website is preferred and should be utilized when accessible) within 24 hours of the discovery under one or more of the following conditions:

NOTE

In case of a naval aircraft mishap, the required reports will be submitted in accordance with OPNAVINST 3750.6R. In addition, a Report of Deviation from Normal Catapult Launch and Arrested Landing will be filed, when applicable (refer to COMNAVAIRPACINST 13800.6E (NOTAL)) or COMNAVAIRLANTINST 3750.30M (NOTAL). However, submission of the preceding reports does not negate the requirement to submit ALRE discrepancy reports as described in this instruction.

a. Malfunction or failure of a component part which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities.

b. A configuration deficiency, which constitutes a safety hazard, is discovered in ALRE or associated equipment.

c. Urgent action or assistance is required and corrective action must be completed at an early date because of an operational requirement.

d. A condition is detected wherein the design of a part is such that incorrect installation can be easily accomplished and system malfunction or failure may occur.

11.11.3 Screening Point Responsibilities. The primary screening point for ALRE equipment is the ALRE FST, NAVAIRWARCENACDIV Lakehurst, NJ. The functions of the screening point are described in paragraph 11.10.7.2, and for HMR and/or EI requests the responsibilities are divided between the NAMDRP Clearinghouse representative and the ALRE FST technical representative. The responsibilities of the NAMDRP Clearinghouse and the FST technical representative are detailed below regarding HMR and/or EI requests. Differences between the handling of an EI as opposed to an HMR are minor and are delineated in paragraph 11.12.

11.11.3.1 NAMDRP Clearinghouse. The function of the Clearinghouse is to monitor the performance of the EI and PQDR processes, and assist Fleet activities resolve problems with specific discrepancy report requests. This will include determining the cognizant action point when requested by the originating activity or FST technical point of contact, providing deficiency report status and metrics for process improvements and providing screening capability for reports submitted via the naval message system. Contact information for the NAMDRP Clearinghouse is available on the NAMDRP Website, www.namdrp.navair.navy.mil.

11.11.3.2 FST Technical Representative(s) Responsibilities. For HMR and/or EI reports the FST technical representative(s) acts as both screening point and action point. Response times are summarized in Figure 11-16. The responsibilities include:

a. Reviews the discrepancy report for proper FST technical representative routing and will readdress to the correct representative if required. Reviews for proper category classification, validity, correctness of entries, accuracy, and completion of information addresses. Conducts liaison with the request originator as required to obtain amplifying/clarifying information on the reported discrepancy/failure. "Accepts" receipt

of the HMR and/or EI request via the NAMDRP website within 1 working day.

b. Study the history of failures and utilize the Fleet Support Team (FST) engineer (TOOL KIT) to determine the need for and value of an investigation on the equipment/material in question. The determination to proceed or not to proceed with the HMR and/or EI shall be completed and an initial response forwarded to the originator, in accordance with paragraphs c and d below, within 3 working days of the request.

c. When engineering analysis, technical dialog, or other factors indicate that an HMR and/or EI is not required, the FST engineer will inform the originator, as well as other required addressees through the NAMDRP website or by naval message. The FST engineer will summarize the factors that led to a decision to deny the HMR and/or EI request.

d. When it is determined an HMR and/or EI is required, the FST technical representative will provide an initial response to include an assigned Investigation Control Number (ICN, assigned over the NAMDRP website in accordance with paragraph 11.10.7.2), and provide shipping instructions for the discrepant equipment / material or describe the arrangements for an on-site investigation. All HMR and/or EI exhibits will be shipped as directed in the shipping instructions received from the Fleet Support Team (FST).

e. The FST technical representative in cooperation with the applicable support points shall develop an EI exhibit examination plan and post it on the NAMDRP website. He/she will ensure the examination plan is provided to the support points and the investigating activity if exhibit is to be examined off-site. He/she will notify the local investigating activity-receiving personnel (Customer Service representative) of the request for the equipment/material exhibit, so the exhibit can be properly identified and routed when received.

f. Follow-up on exhibit non-receipt. Under normal circumstances, follow-up shall be made within 4 days for CONUS shipping or 8 days for non-CONUS shipping, after the initial response, but the period may be extended if it is known that shipment will take longer. Follow-up shall include a NAMDRP website report or message to the HMR and/or EI request originator, after first checking with the local supply activity and investigating activity-receiving area, as a minimum. All possible follow-up actions shall be taken, particularly on equipment/material related to HMRS.

g. Acknowledge receipt of HMR and/or EI exhibit via the NAMDRP website or naval message system within 1 working day of exhibit receipt.

h. The FST technical representative conducts the investigation in accordance with documented standard operating procedures. Immediate corrective action required to resolve life-threatening conditions shall be transmitted by telephone or message within 24 hours. An interim response for the HMR will be provided via the NAMDRP website or naval message system within 10 working days of the initial response (if exhibit was not required) or material receipt (if exhibit was required). A final HMR response will be provided via the NAMDRP website or naval message system within 30 working days of the initial response (if exhibit was not required) or material receipt (if exhibit was required). An interim response shall be provided every 30 working days until a final response is provided. Interim responses shall include status to date and a projected final response date. The final response shall include at a minimum, background, description of findings, conclusions, recommendations, related information, pending action and exhibit disposition information.

11.11.4 Action Point Responsibilities. As described above the action point for ALRE HMR and/or EI requests is the equipment technical representative at FST, NAVAIRWARCENACDIV Lakehurst and their responsibilities are listed above.

11.11.5 Support Point Responsibilities. The responsibilities of the support point are delineated in paragraph 11.10.7.4. Using information provided by the action point, the support point will complete the requested service or analysis specified in the examination plan in order to meet the action point's reporting timeframes listed above.

11.12 ALRE Engineering Investigation (ALRE EI)

11.12.1 ALRE EIs are applicable to all ALRE systems, their subsystems, equipment, components, related SE, special tools, and fluids and materials used in the operation of the equipment. ALRE EIs:

a. Provide an investigation process to determine the cause and depth of fleet reported material failures.

b. Support the investigation of material associated with aircraft mishaps.

c. Support the Scheduled Removal Component (SRC) and Equipment History Record (EHR) programs by providing for the

investigation of high time and on-condition components and assemblies to confirm, revise, or initiate component or assembly operating times.

d. Provide for engineering assistance relating to any fleet ALRE material problem.

11.12.2 Types of ALRE EIs conducted are disassembly and inspection, material analysis, and engineering assistance.

11.12.3 Reporting Criteria. Originating activities shall prepare and submit ALRE EIs in accordance with this instruction.

11.12.3.1 Submit an ALRE EI request under one or more of the following conditions:

a. Safety is involved. This includes ALRE EI requests prepared in conjunction with aircraft mishaps and ALRE HMRS when it is evident that an unsafe condition exists.

b. Additional technical or engineering information is required to complete an aircraft mishap investigation.

c. Launch/recovery systems readiness is seriously impaired due to poor material reliability.

d. When environmental issues force material or process changes that conflict with existing publications or technical directives.

e. When directed by higher authority.

11.12.3.2 Originating activities shall prepare and submit ALRE EIs in accordance with this instruction. They shall:

a. Submit an ALRE EI request by routine request on the NAMDRP website or routine precedence message (submission through the NAMDRP website is preferred and should be used when accessible) within 3 calendar days after discovery of deficiency, unless combined with an ALRE HMR.

b. A combined ALRE HMR/EI shall be sent by priority request on the NAMDRP website or priority precedence message within 24 hours of discovery, see the submission guidance under Hazardous Material Report.

c. Hold defective or environmentally sensitive material in V-2 (ALRE) material control for a minimum of 60 days or until receipt of disposition instructions from the Lakehurst FST.

11.12.4 The screening point, action point and support point functions and responsibilities, the combined handling of the EI request by the NAMDRP Clearinghouse and FST Technical representative, are nearly identical to those of the HMR. The only difference lies in the time of the interim response by the FST technical representative. An interim or final response for the EI will be provided via the NAMDRP website or naval message system within 30 working days of the initial response (if exhibit was not required) or material receipt (if exhibit was required). It shall be the goal of the FST technical representative to complete the investigation within the specified 30 working days and provide the final report response. If circumstances will not allow the completion of the investigation within this timeframe, interim responses are required every 30 working days until a final response is provided.

11.13 ALRE Product Quality Deficiency Report (ALRE PQDR)

11.13.1 An ALRE Product Quality Deficiency Report (PQDR) provides maintenance activities with a method for reporting deficiencies in new or newly-reworked material which may be attributable to nonconformance with contractual or specification requirements or substandard workmanship. Failures must have occurred at zero operating time, during initial installation, operation, test, or check. Discrepancies discovered after the initial use do not qualify for ALRE PQDR reporting, and shall be reported as ALRE HMRs and/or ALRE EIs, as appropriate. ALRE PQDRs are targeted toward reporting possible deficiencies in QA during the manufacturing or rework process. The goal is to improve the quality of work done by naval aviation depots (NAVAVNDEPOTs), naval shipyards, contractors, and subcontractors returning reworked material to supply stock. The process flow for ALRE PQDRs is depicted in figure 11-4. Processing for other ALRE discrepancy reports is similar.

11.13.2 Definition of Terms

11.13.2.1 New Material. Material procured under contract from commercial or government sources or manufactured by an in-house facility. Such material will be considered new until it has been proven in actual system operation.

11.13.2.2 Reworked Material. Material that has been overhauled, rebuilt, repaired, reworked, or modified by an outside military or commercial facility and unproven during actual system operation. Such material will be considered newly reworked until it has been proven during actual system operation.

11.13.3 Types of ALRE PQDRs

11.13.3.1 CAT I. A quality deficiency in new or newly reworked material which may or will affect safety of personnel including causing injury or death; cause loss or major damage to a weapon system; or impair the combat efficiency of an individual or organization, or jeopardize mission accomplishment.

11.13.3.2 CAT II. A report of a quality deficiency in new or newly reworked material that does not meet the criteria set forth in Category I.

11.13.4 Reporting Criteria

11.13.4.1 Originating activities shall prepare and submit ALRE PQDRs in accordance with this instruction.

11.13.4.1.1 ALRE CAT I PQDR Submission. ALRE CAT I PQDRs shall be submitted by a priority request on the NAMDRP website or a priority precedence message (the NAMDRP website is preferred and should be utilized when accessible) within 24 hours after discovery of the deficiency.

NOTE

Do not combine ALRE PQDRs and ALRE EIs or HMRs.

11.13.4.1.2 ALRE CAT II PQDR Submission

a. ALRE CAT II PQDRs shall be submitted by a routine request via the NAMDRP website or a routine precedence message to the fleet support team (FST), "INFO FOR" the originator's type commander. The FST for ALRE is NAVAIRWARCENACDIV Lakehurst.

b. Submit ALRE CAT II PQDRs by routine precedence message within 3 calendar days after discovery of the deficiency if, in the opinion of a QAI, a quality deficiency requires attention. Originating activities should evaluate the administrative costs involved to determine if such costs will exceed the benefits, giving less consideration to administrative costs when the deficiency is recurring or chronic in nature.

c. Units reporting ALRE CAT II PQDR should follow submission instructions on the NAMDRP website when using the website or use the general format contained in paragraph 11.15.1.1 when using the naval message system.

d. ALRE CAT II PQDRs must, as a minimum, include the FST as the action addressee and the originator's type commander as an information addressee.

e. Send copies of all supporting documents, such as, DD 1348-1, DD 1155, photographs, test reports, and other pertinent data to the FST in order to facilitate processing. Include the ALRE CAT II PQDR report control number (RCN) on all documents.

f. ALRE CAT II PQDRs on deficiencies in common or general type material, for example, tools, lubricants, corrosion preventative material, received bad from supply but not installed will be submitted to the Fleet Material Support Office (FLEMATSUPPO). NAVAIRWARCENACDIV Lakehurst remains the FST for ALRE special tools.

NOTE

Exhibits shall be held 60 days by the originating point or until disposition instructions are received from an appropriate screening or action point.

11.13.4.2 All originating activities shall turn in defective ALRE discrepancy report material exhibits to the ALRE material control work center to hold until receipt of exhibit disposition instructions from the FST or directing authority (see paragraph 11.10.6). When disposition instructions are received from the FST, the ALRE material control work center shall take the defective material to the supporting supply department for shipping.

NOTE

Any material directed by the FST to be released to an authorized contractor's representative or shipped directly to a contractor's plant shall be processed through the supporting supply department. Supply can issue the material on a custody basis, only after receiving authority from the FST.

11.13.5 Screening Point Responsibilities. The screening point for ALRE PQDRs is FST, NAVAIRWARCENACDIV Lakehurst, NJ. The functions of the screening point are summarized in Figure 11-16 and described in paragraph 11.10.7.2. In addition to those responsibilities, the screening point shall:

a. Forward an initial response to the originator within 1 working day after receipt of an ALRE CAT I PQDR, or within 3 working days after receipt of an ALRE CAT II PQDR.

b. Forward the PQDR to the appropriate action point within 1 working day after receipt of an ALRE CAT I PQDR or within 10 working days after receipt of an ALRE CAT II PQDR.

11.13.6 Action Point Responsibilities. For ALRE PQDRs, the action point is often the particular exhibit's applicable government procuring activity or the applicable contractor. Action point responsibilities are described in paragraph 11.10.7.3. In addition to those responsibilities, the action point shall:

a. Request the exhibit from the originator, if required, as soon as the need is known but no later than 5 working days after receipt of an ALRE CAT I PQDR or within 10 working days after receipt of an ALRE CAT II PQDR.

b. For CAT I PQDRs, forward an interim or final reply to the screening point within 20 working days after CAT I PQDR receipt (if exhibit was not required) or material receipt (if exhibit was required). If an interim or follow-up interim reply is sent, include status to date and a projected final reply date. Immediate corrective action required to resolve life-threatening conditions shall be transmitted by telephone or message within 24 hours.

c. For CAT II PQDRs, forward an interim or final reply to the screening point within 30 working days after CAT II PQDR receipt (if exhibit was not required) or material receipt (if exhibit was required). If an interim reply or follow-up interim reply is sent, include status to date and a projected final reply date.

11.13.7 Support Point Responsibilities. The support point responsibilities are described in paragraph 11.10.7.4. In addition to those responsibilities the support point will complete the requested service or analysis specified by the action point in order to meet the action point's reporting timeframes listed above.

11.14 ALRE Technical Publication Deficiency Report (ALRE TPDR)

11.14.1 This report provides a simplified procedure for reporting technical publication safety hazards and routine deficiencies.

11.14.1.1 A CAT I ALRE TPDR message is required when a technical publication deficiency is detected which, if not corrected, could result in death or injury to personnel or damage to or loss of aircraft, equipment, or facilities. These are to be reported using the priority precedence CAT I ALRE TPDR message format. The importance of submitting a message for the CAT I ALRE TPDR for safety related deficiencies are emphasized.

11.14.1.2 CAT II publication deficiencies are those that do not meet the criteria of a CAT I ALRE TPDR. They may include technical errors, wrong sequence of adjustments, part number errors or

omissions, and microfilm deficiencies, such as poor aperture card film quality. These are to be reported using Technical Publication Deficiency Report, OPNAV 4790/66 or on the NATEC Website www.natec.navy.mil.

11.14.1.3 Technical publications include MRCs, maintenance and overhaul manuals, operation manuals, illustrated parts breakdowns, technical directives, service bulletins, and other technical manuals. The ALRE TPDR is not applicable when reporting deficiencies in instructions or notices.

11.14.1.4 For NAVSEASYS COM publication deficiencies refer to paragraph 11.16.4.

11.14.2 Reporting Criteria.

11.14.2.1 Originating activities shall prepare and submit ALRE TPDRs in accordance with this instruction.

11.14.2.2 CAT I ALRE TPDR

11.14.2.2.1 All activities shall prepare and submit a CAT I ALRE TPDR priority message within 24 hours of discovery of a deficiency in accordance with paragraph 11.15.2. The action addressee for the message report will be NAVAIRWARCENACDIV Lakehurst (Code 3.3.1) and NATEC (Code 3.3.A).

NOTE

For CAT I ALRE TPDRs involving ALRE QA and ALRE C cards, NATEC will not be a recipient of the report. The message report action addressee will be AIG ONE THREE EIGHT EIGHT FIVE. In the remarks section of the message state, "THIS MSG ACTION FOR NAVAIRWARCENACDIVLKE. INFO FOR ALL OTHERS." AIG ONE THREE EIGHT EIGHT FIVE shall not be used in the info addressee line of the message.

11.14.2.2.2 When urgency dictates, CAT I ALRE TPDRs may be reported by the most expeditious means available, for example, telephone, facsimile (FAX) or local visit. The NAVAIRWARCENACDIV Lakehurst FAX numbers are (732) 323-7232/7233.

NOTE

Oral or facsimile communication shall be promptly confirmed by message.

11.14.2.3 ALRE CAT II TPDR

11.14.2.3.1 All activities shall use the OPNAV 4790/66 (figures 11-12 and 11-13) or on the NATEC Website www.natec.navy.mil within

10 working days for reporting routine technical publication deficiencies (CAT II). The original and one copy shall be sent to NATEC Code 3.3.A, one copy shall be sent to NAVAIRWARCENACDIV Lakehurst (Code 3.3.1), and one copy shall be sent to the originator's type commander (COMNAVAIRLANT or COMNAVAIRPAC).

NOTE

For CAT II ALRE TPDRs involving ALRE QA and ALRE C cards, NATEC will not be a recipient of the report. The report will be sent to NAVAIRWARCENACDIV Lakehurst (Code 3.3.1).

11.14.3 NATEC will serve as the central manager for all NAVAIRSYSCOM technical publications and shall:

- a. Maintain a record of all technical manual deficiencies.
- b. Acknowledge receipt of each ALRE TPDR to the originator and assign FST action for ALRE TPDRs as required. This will be accomplished within 1 working day after receipt of CAT I ALRE TPDRs, and within 10 working days after receipt of CAT II ALRE TPDRs.
- c. Coordinate action with FST and contractor to ensure correction of technical publications.
- d. Follow-up on each ALRE TPDR to ensure corrective action is accomplished.
- e. Provide ALRE TPDR status as required to the applicable TYCOM.

11.14.3.1 FSTs will coordinate with the NATEC and take the appropriate action necessary to ensure the deficiency is resolved, for example, correctness of technical publication, appropriate printing assignment, or preparation and initiation of change for corrective action.

11.14.3.2 NATEC will report action taken on all ALRE TPDRs in a timely manner.

11.14.3.3 FSTs will notify NATEC and the ALRE TPDR originator of final disposition of each ALRE TPDR. FSTs shall also ensure that all addressees of the original report are included in all correspondence related to that report.

11.15 ALRE Discrepancy Report Preparation

11.15.1 ALRE HMR, ALRE EI and ALRE PQDR Preparation.

11.15.1.1 Whenever possible, ALRE HMRs, ALRE EIs, ALRE PQDRs and combined discrepancy reports should be reported through the NAMDRP website. Report submission instructions are posted on the website and are very similar to submission through the naval message system. When circumstances will not permit reporting through the website, the following format and content apply to ALRE HMR, ALRE EI, ALRE PQDR, and combined ALRE discrepancy message reports. (Examples are provided in figures 11-5 through 11-10 and a convenient message template is provided in figure 11-18).

NOTE

Use of MINIMIZE CONSIDERED shall be in accordance with the NTP-3 (NOTAL).

Precedence: Priority/Routine (as applicable)
From: Message Originator
To: NAVAIRWARCENACDIV LAKEHURST NJ
AIG ONE THREE EIGHT EIGHT FIVE

NOTE

AIG ONE THREE EIGHT EIGHT FIVE shall not be used in the info addressee line of the message.

Info: NAVICP Mechanicsburg PA//05632// (all 1H or 7E COG material)

NOTE

Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E); however, every attempt should be made to employ UNCLAS to expedite routing.

Subj: List applicable subject or combination of subjects, for example ALRE Catapult HMR/EI, or ALRE VLA CAT I PQDR

Ref: A. OPNAVINST 4790.15D CHG2

NOTE

Reference other applicable instructions and any related mishap/investigation reports submitted in accordance with OPNAVINST 3750.6R and mishap classification and serial number. Include only instructions and references applicable to the occurrence. When a technical manual is referenced, include issue date and latest change date.

1. Reporting custodian/UIC.
Example: USS SHIP (CV-00)/03300.
2. FST for failed item. Example: NAVAIRWARCENACDIV LAKEHURST, NJ.

3. Report Control Number (RCN): A number assigned by the originating activity in accordance with paragraph 11.10.5.3.

Example: R00123-02-8003

4. The five digit Julian date/location that deficiency was discovered. Example: 03125/Deployed.

5. National Stock Number (NSN) information of discrepant item. Enter cognizance symbol, national stock number and special material identification code (SMIC) of the unsatisfactory material. Example: 7RH, 1234-00-123-1234, EY. Enter N/A or UNK for these elements if not applicable or unknown.

NOTE

Do not leave the NSN blank without ALRE maintenance officer's approval.

6. Discrepant Item Nomenclature. Annotate as officially described on drawings or in manuals.

7A. For new material, indicate manufacturer's five digit CAGE code, name, city and state. Example: 12345, Vandeley Industries, Springfield, MO. Enter N/A or UNK for these elements if not applicable or unknown.

7B. For reworked material, indicate the last rework activity's five digit CAGE code, name, city, and state. Example: 54321, Overhaul Experts Inc., Columbus, OH. Enter N/A or UNK for these elements if not applicable or unknown.

7C. Enter Shipper's name, city and state. Example: 00012, Shipping Expeditors, Las Vegas, NV. Enter N/A or UNK for these elements if not applicable or unknown.

8. Part Number of Discrepant Item. Enter the manufacturer's part number and the NAVAIRWARCENACDIV Lakehurst part number. Enter N/A or UNK for these elements if not applicable or unknown.

9. Serial, lot, or batch number (indicates number used). Enter N/A or UNK for these elements if not applicable or unknown.

10. Contract Number, Purchase Order Number, Re-order Requisition Number (Turn-in Document Number, Government Bill of Lading (GBL) Number. Separate information by commas. Enter N/A or UNK for these elements if not applicable or unknown.

a. Contract No: Enter the contract number, if applicable. Contract numbers are especially important and should be entered when available. Enter total contract number (13 to 17 characters),

if available. For a 13-digit contract number, the first six characters identify buying activity (N68335 is NAVAIRWARCENACDIV Lakehurst, N00383 is NAVICP Philadelphia, N00140 is Naval Regional Contracting Center, etc). Next two digits identify year contract was awarded, next letter digit identifies contracting method, and last four digits identify the contract serial number. Contract numbers are especially important and must be entered when available.

NOTE

The ALRE maintenance officer must approve an entry of "UNK" for the contract number.

b. Purchase Order No: Enter the purchase order number, if applicable.

c. Re-order Requisition No/Turn-in Doc No: Enter the re-order requisition number (turn-in document number) of depot level repairable items to receive charge reversal credit. Enter UNK or N/A if unknown or not applicable.

d. Government Bill of Lading (GBL): Enter the GBL number, if known or applicable.

11. New or newly reworked, if known. Enter the word "NEW" for items received through the supply system (unless known to have been refurbished) or direct shipments from a manufacturer. Enter the word "REWORKED" for items received via the supply system that are known to have been refurbished or those items from an authorized rework activity (i.e., VRT/SIMA). If RFI tag is still available, indicate REPAIRED, REWORKED, OVERHAULED or UPKEEP as indicated on the RFI tag. If status is unknown, enter "UNK" (unknown). If not applicable (ALRE HMR/ALRE EI), enter "N/A".

12. Date manufactured, reworked, or overhauled, when available. If unknown, enter "UNK".

13. Operating time at failure/events. Indicate units (such as hours, arrestments, catapult shots, etc.). If unknown, enter "UNK".

14. Government-furnished material (YES, NO, N/A or UNK). Government-furnished material includes service change kits, interim spares, and initial outfitting items.

15. Quantity: Quantity shall be a count of each individual item, disregarding unit of issue. If problem does not relate to a quantity, enter "N/A".

a. Received: Enter the total number of items received in the lot or batch in which the unsatisfactory material condition was found, if known.

b. Inspected: Enter the number of items that were inspected for the deficiency.

c. Deficient: Enter the number of items that were determined to be deficient as a result of the inspection.

d. In Stock: Enter the number of items remaining in stock locally.

16. Deficient item works on or with: Indicate the name and part number of the equipment the problem is part of, adding MK and MOD where applicable.

a. End item nomenclature (arresting gear engine, jet blast detector (JBD), etc.), end item serial number (enter N/A if not applicable).

b. Next higher assembly NSN, nomenclature, part number, serial number (if applicable.)

17. Dollar value of deficient material, man-hours to repair, estimated repair cost (if known or applicable, do not use commas). Example: 25000 DOLLARS, 150 MHRS, 300.00 DOLLARS.

18. If hazardous material or procedure, include military specification (MILSPEC), type, class/grade, or NONE if no MILSPEC is available; if the report does not concern environmentally sensitive material or procedures, enter "N/A".

19. Item under warranty and expiration date. Enter YES, NO, N/A or UNK. (Enter UNK for ALRE material).

20. Equipment Identification Code (EIC): Enter the most specific code available.

21. Exhibit Disposition. Exhibits are important to determine the root cause of a problem, to return to a contractor for corrective-action purposes, or to precipitate a stock system purge action.

a. Identify the supply unit that may ship the exhibit. This will enable the identified supply unit to ship the exhibit using commercial premium shipping on the NAMDRP web site.

b. Action/Disposition narrative. Material shall be handled as per paragraph 11.10.6. Enter "EXHIBIT HELD" to indicate that

problem item is available for examination. Identify the location where the deficient material is being held, if applicable. If an exhibit is being held, indicate the number of days (minimum of 60 calendar days) the exhibit will be held.

NOTE

Material shall be shipped within 3 days of receipt of disposition instructions from the FST.

22. Details

a. Narrative description. As precisely as possible, describe the type, scope and extent of the problem, known or probable causes, pertinent service changes incorporated, environmental issue listing references and regulatory agency, comments/recommendations to reduce or eliminate the source of the problem (if any). Indicate urgency, assistance needed, etc.

b. How safety of personnel or activity mission is affected.

c. Number of similar deficiencies in like items reported by the originating activity, for example, five in the past 4 months.

d. How deficiency was detected or confirmed, such as, visually or functional operation. Where deficiency was discovered, for example, maintenance/operational test.

e. Storage/handling information, if applicable. (If it appears these factors have contributed to the deficient material condition).

f. Indicate if supporting documents will be supplied. Photographs to follow, are available upon request, are not available (as applicable). When photographs are taken, place a ruler alongside the object so as to appear in each photograph. Measurements should also appear on sketches. Write the report control number from block 3 on the back of photographs.

g. Description of incorrectly identified new material, if applicable.

h. Recommendations (PQDR Requisition Doc Number). Enter N/A for ALRE EIs/ALRE HMRs. For ALRE PQDRs use this field to identify or assign a requisition document number. In order to receive credit for defective 9 COG and SPCC COG (1H,7E,7G,7H) material:

(1) List the original MILSTRIP requisition document number, "BILL TO" DOD Activity Address Code (DODAAC) (if different

from requisitioned DODAAC), and the applicable Fund and Signal codes. When the original document number cannot be determined, a MILSTRIP document number must be assigned as follows:

NOTE

Following closing action on discrepant NAVICP-managed material (any remaining 1H, 3H, 4R, 5R, 7E, 7G, 7H, 7R and OM COG), NAVAIRWARCENACDIV Lakehurst will request credit to the end user by submitting a letter to NAVICP Philadelphia and Mechanicsburg (Material Returns Program Code 015), as appropriate. The letter must contain the complete document number under which the discrepant item was issued, and must be accompanied by a copy of the original CAT I/II PQDR message with closing action. This procedure requires that the originating activity provide the original MILSTRIP requisition document number as detailed above.

(a) The originating point DODAAC will comprise the first six characters (the DODAAC will receive credit unless otherwise specified).

(b) The current Julian calendar date for the next four characters - the ending four-digit serial number beginning with "U" will complete the constructed document number.

(c) Example: N63124-4286-U001

i. Name, rank, and DSN number of ALRE maintenance officer. (If deployed, delete phone number and insert the word DEPLOYED).

j. Work center code (example: VB01 for Catapult No. 1.)

k. N/A.

l. N/A.

11.15.2 CAT I ALRE TPDR Preparation.

11.15.2.1 The following format and content apply to CAT I ALRE TPDR message reports. (An example is provided in figure 11-11).

NOTE

Use of MINIMIZE CONSIDERED shall be in accordance with the NTP-3 (NOTAL).

Precedence: Priority
From: Message Originator
To: AIG ONE THREE EIGHT EIGHT FIVE
NATEC SAN DIEGO CA//3.3.A//

NOTE

AIG ONE THREE EIGHT EIGHT FIVE shall not be used in the info address line of the message.

NOTE

Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E); however, every attempt should be made to employ UNCLAS to expedite routing.

UNCLASS//13800//
MSGID/GENADMIN/V-2//
SUBJ/CAT I ALRE TECHNICAL PUBLICATION DEFICIENCY REPORT
REF/A/DOC/OPNAV/01FEB97//
AMPN/OPNAVINST 4790.15D CHG1
RMKS/THIS MSG DUAL ACTION FOR NATEC SAN DIEGO AND NAVAIRWARCENACDIV
LKE. INFO FOR ALL OTHERS.
1. Reporting custodian/UIC.

2. Equipment FST.
3. Report Control Number.
4. Julian date deficiency discovered.
5. NSN of publication. **
6. through 21: N/A.
22. Details.

- a. Technical manual number.
- b. Equipment model number. **
- c. Basic date of technical manual
- d. Change date/change number.
- e. Work Package Number **
- f. Page number.
- g. Paragraph number.
- h. Figure number/table number.
- i. Aperture card number. **

- j. Aperture card date. **
- k. Aperture card revision number and date. **
- l. Deficiency (be specific).
- m. Recommendations (be specific).
- n. Name, rank, and DSN number of ALRE maintenance officer.
(If deployed, delete phone number and insert the word DEPLOYED).

NOTE

**** indicates these information blocks are not applicable for CAT I ALRE TPDRs concerning ALRE QA cards.**

11.15.3 CAT II ALRE TPDR Preparation.

11.15.3.1 The format and content for submission of CAT II ALRE TPDR reports are contained on the reverse of the Technical Publications Deficiency Report (TPDR) (OPNAV 4790/66). (Refer to figures 11-12 and 11-13).

NOTE

For CAT II ALRE TPDRs involving ALRE QA cards, refer to paragraph 11.14.2.3.1.

11.16 Other Required Reports

11.16.1 Familiarity with reports and compliance with reporting procedures such as Departures from Specifications, PMS Feedback Reports, and Technical Manual Deficiency/Evaluation Reports (TMDERs) are necessary to an effective QA program.

11.16.2 A Departure from Specifications is a lack of compliance with any authoritative document, plans, procedure, instruction or notice. Specifications include:

- a. ALRE numerical drawing list, detail specifications.
- b. MIL Standard and MIL Spec series.
- c. NAVAIRSYSCOM technical manuals, instructions, bulletins, letters, notices, repair procedures, etc.
- d. COMNAVAIRLANT/COMNAVAIRPAC instructions/notices.
- e. OPNAV instructions/notices.

11.16.2.1 Whenever a departure from ALRE specifications (material and/or installation) is necessary, a message request for Departure from Specifications will be submitted to the TYCOM (info COMNAVAIRSYSCOM and NAVAIRWARCENACDIV Lakehurst). CINCLANTFLT / CINCPACFLTINST 4790.3 (NOTAL) gives a complete description of this procedure. Departures from Specification will be categorized as follows:

a. Minor departure - A departure from ALRE specification in a system/subsystem that poses no threat to safety of flight, injury to personnel or damage to equipment. Commanding officers have authority to approve such departure to place equipment in operational status but must follow up with a message to the TYCOM.

b. Major departure - A departure from ALRE specification in a system/subsystem that could jeopardize safety of flight, cause injury to personnel or damage to equipment. Such a departure must be granted by the TYCOM before normal operations resume. NAVAIRWARCENACDIV Lakehurst, as the FST, will make an engineering appraisal of the departure when requested by the TYCOM.

11.16.3 PMS Feedback Report. The PMS Feedback Report (OPNAV 4790/7B) is used to report discrepancies related to the Planned Maintenance System (PMS). The report notifies FTSC/LANT/PAC, and the TYCOM on PMS issues, procedural problems, or deficiencies in documentation requirements. Instructions on its use are found in OPNAVINST 4790.4C (NOTAL) and NAVSEAINST 4790.3B (NOTAL).

11.16.4 Technical Manual Deficiency/Evaluation Report. Discrepancies in NAVSEASYSYSCOM technical manuals will be reported via the Technical Manual Deficiency/Evaluation Report (TMDER) (NAVSEA 4160/1) (Rev 10-89). (Refer to figure 11-14.)

11.17 Address Indicator Group ONE THREE EIGHT EIGHT FIVE

11.17.1 AIG ONE THREE EIGHT EIGHT FIVE contains approximately 30 addressees including each carrier, all ALRE shore activities, all CAFSU field offices, SIMAs, and some training commands. To obtain a current list, contact the command communications center AIG clerk. NAVAIRSYSCOM PMA 251F, as the cognizant authority of AIG ONE THREE EIGHT EIGHT FIVE, will update the AIG annually (June) via recapitulation message.

11.17.2 Care shall be taken in preparing naval messages to ensure that the AIG is NOT included in the "INFO" line of the message text. Further, commands shall NOT duplicate addresses, by ensuring that a command listed in the AIG is not also listed in the "TO" or "INFO" text of the message.

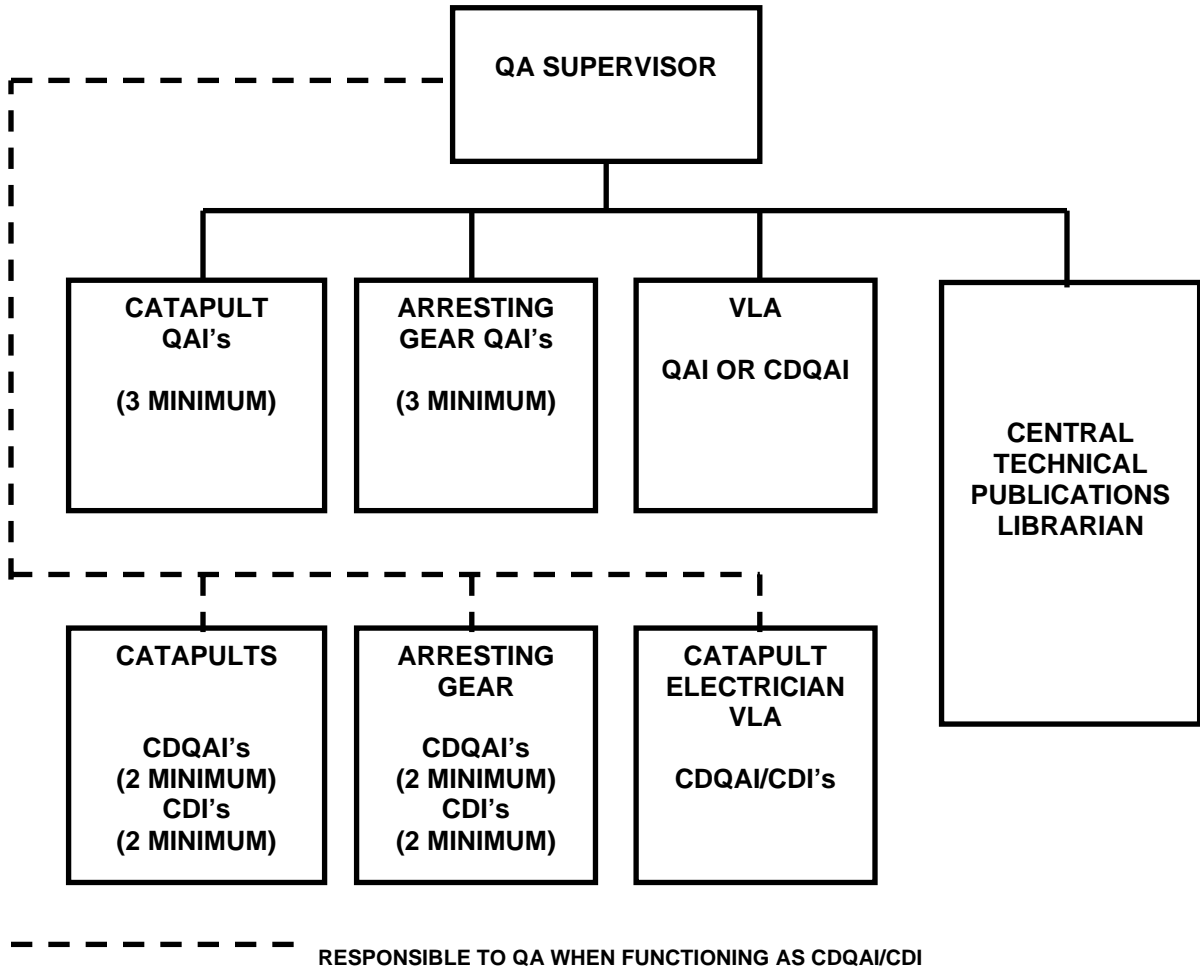


Figure 11-1. ALRE Quality Assurance Organization

ALRE QUALITY ASSURANCE INSPECTOR RECOMMENDATION/DESIGNATION		
CANDIDATE NAME		RATE
I. WORK CENTER SUPERVISOR RECOMMENDATION In accordance with OPNAVINST 4790.15 the above named person is recommended for: <input type="checkbox"/> QAI <input type="checkbox"/> CDQAI <input type="checkbox"/> CDI		
FOR: (SYSTEM/SUBSYSTEM, ETC.)		
W/C SUPERVISOR	SIGNATURE	DATE
II. QUALITY ASSURANCE ENDORSEMENT The candidate has been examined in accordance with OPNAVINST 4790.15 and has passed all requirements satisfactorily. Recommended approval.		
QA SUPERVISOR TYPED NAME AND RANK	SIGNATURE	DATE
III. ALRE MAINTENANCE OFFICER ENDORSEMENT RECOMMENDED APPROVAL <input type="checkbox"/> DISAPPROVAL <input type="checkbox"/>		
MAINTENANCE OFFICER TYPED NAME AND RANK	SIGNATURE	DATE
IV. V-2 DIVISION OFFICER ENDORSEMENT RECOMMENDED APPROVAL <input type="checkbox"/> DISAPPROVAL <input type="checkbox"/>		
V-2 OFFICER TYPED NAME AND RANK	SIGNATURE	DATE
V. AIR OFFICER ENDORSEMENT/ACTION <input type="checkbox"/> APPROVAL <input type="checkbox"/> DISAPPROVAL <input type="checkbox"/> DESIGNATED <input type="checkbox"/> NOT DESIGNATED		
AIR OFFICER TYPED NAME AND RANK	SIGNATURE	DATE
VI. COMMANDING OFFICER ACTION <input type="checkbox"/> DESIGNATED <input type="checkbox"/> NOT DESIGNATED		
COMMANDING OFFICER TYPED NAME AND RANK	SIGNATURE	DATE
VII. DESIGNEE RESPONSIBILITY I understand my responsibility as set forth herein: "When performing Inspections, I am considered to be the direct representative of the Commanding Officer for ensuring operational safety of the Item concerned. I will not permit factors, such as operational desires, maintenance consideration, personal relations or the approach of liberty to modify my judgement. By signing an inspection report, I am certifying upon my own individual responsibility that the work involved has been personally inspected by me; that It has been properly completed and is in accordance with current instructions and directives; that it is satisfactory; that any related parts or components which may have been removed by the work are properly replaced and all parts are secure; and that the work has been performed in such a manner that the item is completely safe for use."		
CANDIDATE TYPED NAME	SIGNATURE	DATE

Original to: Quality Assurance
Copy to: Branch Officer

Figure 11-2. Quality Assurance Inspector Recommendation/ Designation

CVN-76 MI 1-00
28 February 2000

CVN-76 Maintenance Instruction 1-00

From: ALRE Maintenance Officer

Subj: ALRE Quality Assurance Audit Program

Ref: (a) (Include references as applicable)

Encl: (1) (Include enclosures as applicable)

1. Purpose. (The first paragraph of the maintenance instruction shall state the purpose of the directive.)

2. Cancellation. (The second paragraph should contain a cancellation statement if applicable.)

3. (Third and subsequent paragraphs contain the text of the maintenance instruction, such as background information, responsibilities, or action requirements.)

SAMPLE

S.V.L. Coupling
(Signature and typed name
of the ALRE maintenance officer)

Distribution:
(Include a listing of
applicable work centers)

Figure 11-3. Sample Maintenance Instruction

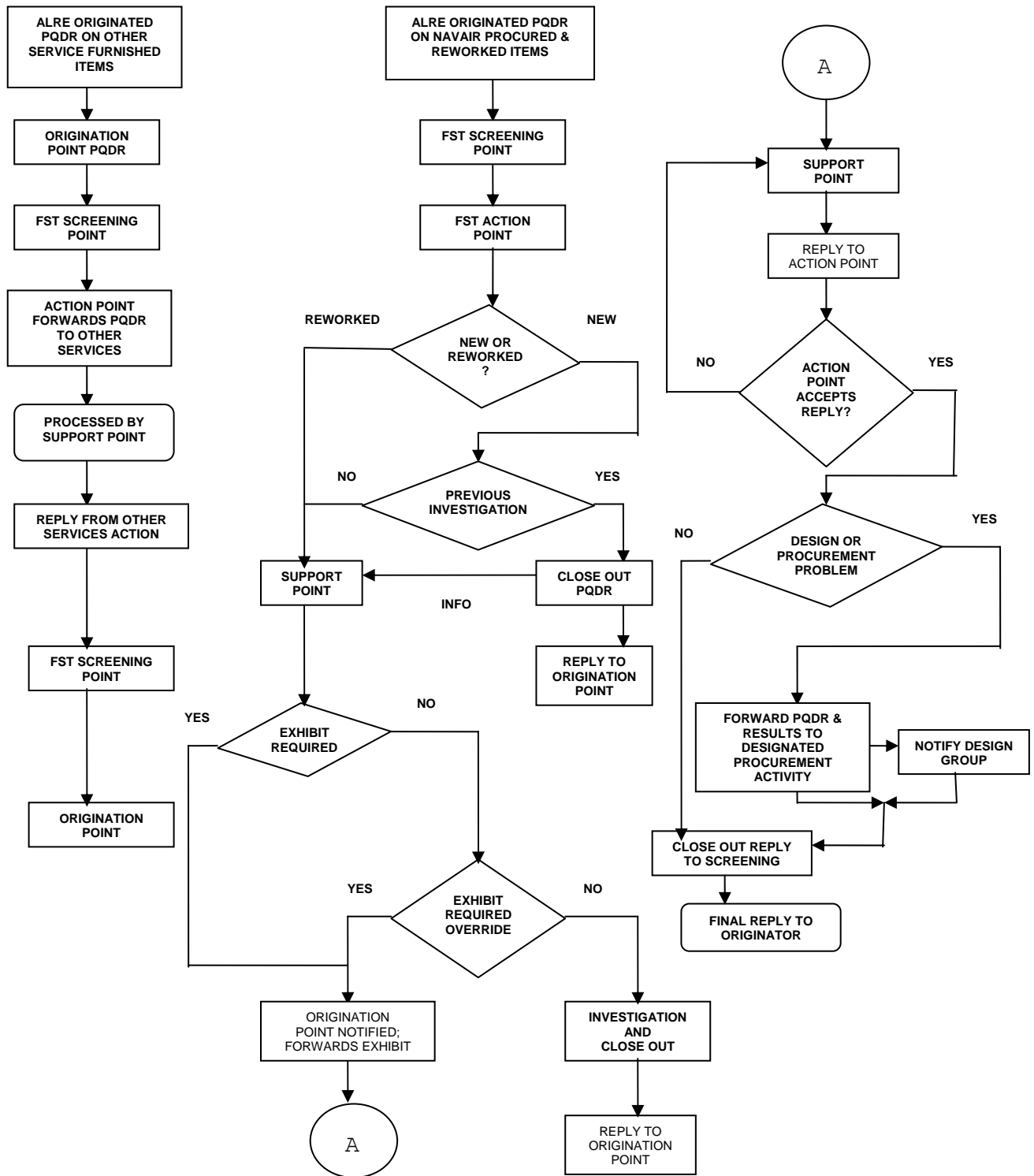


Figure 11-4. ALRE PQDR Process Flow

FROM: USS SHIP//
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS //13800//
MSGID/GENADMIN/V-2//
SUBJ/ALRE HAZARDOUS MATERIAL REPORT//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1. THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS. //
RMKS/1. USS SHIP (CVN 00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. R03300-95-8032
4. 02300/DEPLOYED
5. 5R, 1710-00-102-7796, EY
6. PURCHASE CABLE ASSEMBLY
7A. 91796, RIDON AMERICAN CORP, SPRINGFIELD, NH
7B. N/A
7C. A-1 SHIPPERS INC., NORFOLK, VA
8. 515659-2, 515659-2
9. UNK, UNK
10A. N00383-91-C-5158
10B. N/A
10C. N0330050329003
10D. N/A
11. N/A
12. UNK
13. 50 ARRESTMENTS
14. N/A
15A. 1
15B. 1
15C. 1
15D. 0
16A. MK7 MOD3 ARRESTING GEAR P/N 624216-15, N/A
16B. N/A, PENDANT ENGINE, 624216-15, N/A
17. 10777.00 DOLLARS, 25 MHRS, UNK
18. N/A
19. UNK
20. 7C1A140
21A. USS SHIP SUPPLY
21B. EXHIBIT HELD BY CV-00 V-2 (ALRE) MATERIAL CONTROL FOR 60 DAYS PENDING
DISPOSITION INSTRUCTIONS.
22A. DURING FIRST 50 HIT PMS, INSPECTED CONTRACTOR POURED TERMINAL. FOUND SIX
CAVITIES ON FACE OF TERMINAL. FIVE OF THESE HOLES WERE GREATER THAN ACCEPTABLE
CRITERIA IAW NAVAIR 51-5BCA1.1 CHAPTER 17.
22B. COULD CAUSE WIRE TO FAIL AT TERMINAL RESULTING IN REDUCED OPERATIONAL
CAPABILITY, LOSS OF AIRCRAFT OR LIFE.
22C. NONE
22D. VISUAL INSPECTION
22E. N/A
22F. N/A
22G. N/A
22H. N/A
22I. L.H. CROSSHEAD, CWO4, ALRE MAINTENANCE OFFICER, DEPLOYED
22J. VB07
22K. N/A
22L. N/A //

Figure 11-5. Sample ALRE Hazardous Material Report Message

FROM: USS SHIP//
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS //13820//
MSGID/GENADMIN/V-2//
SUBJ/ALRE ENGINEERING INVESTIGATION REQUEST//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1. THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS.//
RMKS/1. USS SHIP (CVN-00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. R03300-95-8032
4. 02355/DEPLOYED
5. 5R, 1720-00-476-0009, EY
6. CHOKE RING
7A. 32145, TEXAS ELECTRONICS INC., DALLAS, TX7B. N/A
7C. UNK
8. TXEL50684, 14-50684-3
9. UNK, UNK
10A. V00383-87-C-9621
10B. N/A
10C. N033005032900310D. UNK
11. NEW
12. UNK
13. UNK
14. N/A
15A. 1
15B. 1
15C. 1
15D. 0
16A. C13 MOD2 CATAPULT P/N 622295-1, N/A
16B. N/A, WATER BRAKE INSTALLATION, 622123-1, N/A
17. 482 DOLLARS, 55 MHRS, UNK
18. N/A
19. UNK
20. 7A1AK00
21A. USS SHIP SUPPLY
21B. EXHIBIT HELD FOR 60 DAYS CVN-00 V-2 (ALRE) MATERIAL CONTROL AWAITING
DISPOSITION INSTRUCTIONS.
22A. LEFT HAND CHOKE RING FROM CATAPULT 3 HAS A CRACK IN SIX O'CLOCK POSITION.
CRACK IS 1/32 IN. WIDE ON SURFACE AND 2 IN LONG.
22B. CAN CAUSE DEGRADED WATERBRAKE PERFORMANCE.
22C. NONE
22D. VISUAL INSPECTION
22E. N/A
22F. PHOTOS AVAILABLE UPON REQUEST.
22G. N/A
22H. N/A
22I. J.W. BOWCAT, LT, ALRE MAINTENANCE OFFICER, DEPLOYED
22J. VB03
22K. N/A
22L. N/A //

Figure 11-6. Sample ALRE Engineering Investigation Request Message

FROM: USS SHIP//
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS //13800//
MSGID/GENADMIN/V-2//
SUBJ/ALRE ENGINEERING INVESTIGATION REQUEST//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1. THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS. //
RMKS/1. USS SHIP(CVN-00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. R03300-95-8032
4. 03114/DEPLOYED
5. 9C, 9150-00-272-7652, EY
6. GREASE, GRAPHITE
7A. UNK, NONFLUID OIL CORP, BOSTON, MA
7B. N/A
7C. N/A
8. N/A, N/A
9. N/A, N/A
10A. DLA 40089 MA028
10B. N/A
10C. N/A10D. N/A
11. N/A
12. N/A
13. NONE
14. NO
15A. 1
15B. 0
15C. 1
15D. 0
16A. MK 7 ARRESTING GEAR ENGINE ASSY P/N 624216-15, N/A
16B. N/A, A/G ENGINE, 624216-15, N/A
17. 54.00 DOLLARS, N/A, N/A
18. MILSPEC VV-G-671
19. UNK
20. SPMIG NR 568
21A. USS SHIP SUPPLY
21B. EXHIBIT HELD FOR 60 DAYS CVN-00 V-2 (ALRE) MATERIAL CONTROL AWAITING
DISPOSITION INSTRUCTIONS.
22A. VV-G-671 IS USED THROUGHOUT THE A/G SYSTEM. VV-G-671 IS NOT ABLE TO BE
ACQUIRED THROUGH THE LOCAL SUPPLY SYSTEM. SUPPLY IS UNABLE TO BRING THIS ITEM
ABOARD SHIP DUE TO LOCAL AND STATE EPA REGULATIONS. DISPOSITION HAS BEEN
DIFFICULT DUE TO HIGH COSTS.
22B. UNK
22C. ORIGINAL
22D. SUPPLY ORDER REJECTED
22E. N/A
22F. N/A
22G. N/A
22H. N/A
22I. ABEC L. RUNOUT, QA, LCPO
22J. VB20
22K. N/A
22L. N/A //

**Figure 11-7. Sample ALRE Engineering Investigation Request Message
(Environmental Impact)**

FROM: USS SHIP//
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS //13820//
MSGID/GENADMIN/V-2//
SUBJ/ALRE HAZARDOUS MATERIAL REPORT/ENGINEERING INVESTIGATION REQUEST//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1. THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS.//
RMKS/1. USS SHIP(CVN-00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. R03300-95-8032
4. 02351
5. 5RM, 1720-00-716-1269, EY
6. EMERGENCY CUTOFF VALVE
7A. 80012, TELEDYNE REPUBLIC MFG., COLUMBUS, OH7B. N/A
7C. N/A
8. 3124WLH127RH, 407530-2
9. UNK, UNK
10A. N68335-86-C-1221
10B. N/A
10C. UNK10D. N/A
11. N/A
12. UNK
13. 12 MONTHS
14. N/A
15A. 1
15B. 1
15C. 1
15D. 816A. C13 MOD1 CATAPULT P/N 622295-1, N/A
16B. 9876-32-321-4321, CENTRAL CHARGING PANEL, 624123-13, N/A
17. 400 DOLLARS, 15 MHRS, UNK
18. N/A
19. UNK
20. 7A6A100
21A. USS SHIP SUPPLY
21B. EXHIBIT HELD CVN-00 V-2 (ALRE) MATERIAL CONTROL FOR SIXTY DAYS AWAITING
DISPOSITION INSTRUCTIONS.
22A. VALVE STEM SNAPPED AT HANDLE DURING MONTHLY PMS FUNCTIONAL TEST. HANDLE
CANNOT BE REMOUNTED ON VALVE STEM. VALVE STEM APPEARS TO BE INADEQUATELY DESIGNED
AT THREADED HOLE FOR THE HANDLE FASTENING SCREW. STEM SNAPPED AFTER LIGHT IMPACT
OF HANDLE AGAINST VALVE STOP.
22B. POSSIBLE CATASTROPHIC POTENTIAL IF THIS OCCURRED DURING AN AIRCRAFT HANGFIRE;
LOSS OF AIRCRAFT OR LIFE. NO EMERGENCY PROCEDURES EXIST IF CUTOFF VALVE STEM
FAILS IN MID STROKE.
22C. NONE
22D. FUNCTIONAL TEST
22E. N/A
22F. N/A
22G. N/A
22H. N/A
22I. R.T. LAUNCHVALVE, LT, ALRE MAINTENANCE OFFICER, DEPLOYED
22J. VB03
22K. N/A
22L. N/A //

**Figure 11-8. Sample ALRE Hazardous Material Report/Engineering
Investigation Request Message**

FROM: USS SHIP//
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS //13810//
MSGID/GENADMIN/V-2//
SUBJ/ALRE CAT I PRODUCT QUALITY DEFICIENCY REPORT//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1 THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS.//
RMKS/1. USS SHIP(CV-00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. V03300-95-8032
4. 02330/DEPLOYED
5. 5RM, 1710-00-102-7796, EY
6. CABLE AND REEL ASSEMBLY
7A. 98247, CANADIAN COMMERCIAL CORP., ONTARIO, CANADA7B. N/A8. 515659-2, 515659-2
9. UNK, UNK
10A. N00383-85-C-3512
10B. N/A10C. N033005032900310D. UNK
11. NEW
12. UNK
13. 0 ARRESTMENTS
14. NO
15A. 3
15B. 1
15C. 1
15D. 2
16A. MK7 MOD2 ARRESTING GEAR ENGINE P/N 624216-15, N/A
16B. N/A, PENDANT ENGINE, 624216-15, N/A
17. 10820 DOLLARS, 40 MHRS, N/A
18. N/A
19. UNK
20. 7C1A140
21A. USS SHIP SUPPLY
21B. EXHIBIT HELD BY CV-00 V-2 (ALRE) MATERIAL CONTROL FOR 60 DAYS AWAITING
DISPOSITION INSTRUCTIONS.
22A. DURING INSTALLATION OF NEW PURCHASE CABLE DISCOVERED BOTH MANUFACTURER POURED
TERMINALS DID NOT MEET REQUIRED SPEC'S IAW NA 51-5BBA-1.1. BOTH TERMINALS HAD
EXCESSIVE NUMBER OF PULLED WIRES AND CAVITIES. ZINC RECESSION ON THE STARBOARD
SIDE WAS 0.098 IN. INSTEAD OF MAXIMUM 0.060 IN. DISCREPANT TERMINALS WHERE CUT
AND REPOURED ONBOARD.
22B. POSSIBLE WIRE FAILURE AT TERMINAL RESULTING IN REDUCED OPERATIONAL
CAPABILITY; POSSIBLE LOSS OF AIRCRAFT OR LIFE.
22C. NONE
22D. DETECTED DURING VISUAL INSPECTION PRIOR TO INSTALLATION.
22E. N/A
22F. PHOTOS ARE AVAILABLE UPON REQUEST.
22G. N/A22H. N0330050329003
22I. L.H. CROSSHEAD, LT, ALRE MAINTENANCE OFFICER, DEPLOYED.
22J. VB08
22K. N/A
22L. N/A //

**Figure 11-9. Sample ALRE CAT I PRODUCT Quality Deficiency Report
Message**

FROM: USS SHIP
TO: NAVAIRWARCENACDIV LAKEHURST NJ//
AIG ONE THREE EIGHT EIGHT FIVE//
UNCLAS//13800//
MSGID/GENADMIN/V-2//
SUBJ/ALRE CAT II PRODUCT QUALITY DEFICIENCY REPORT//
REF/A/DOC/OPNAV/26JUN02//
NARR/REF A IS OPNAVINST 4790.15D CHG1. THIS MSG ACTION FOR NAVAIRWARCENACDIV LKE.
INFO ALL OTHERS.//
RMKS/1. USS SHIP(CV00)/03300
2. NAVAIRWARCENACDIV LAKEHURST NJ
3. R03300-96-8001
4. 03034/DEPLOYED
5. S9C, 1720-00-476-0009, EH
6. CHOKE RING
7A. 62577, PIONEER SALES COMPANY, CLEVELAND, OH
7B. N/A
7C. UNK
8. PSC55432-012, 14-50684-3
9. SN312, N/A
10A. N00383-97-C-9621
10B. N/A
10C. N03305032900310D. N/A
11. NEW
12. 12 DEC 98
13. 0 CAT SHOTS
14. NO
15A. 10
15B. 10
15C. 10
15D. 0
16A. C13 CATAPULT 10-61316-1, N/A
16B. 3214-12-123-1234, WATER BRAKE ASSY, 610614-1, N/A
17. 829.20 DOLLARS, 3 MHRS, UNK18. N/A
19. UNK
20. 7A1AK3421A. USS SHIP SUPPLY
21B. EXHIBIT HELD BY CV-00 V-2 (ALRE) MATERIAL CONTROL FOR 60 DAYS AWAITING
DISPOSITION INSTRUCTIONS.
22A. LOW URGENCY. ADEQUATE SPARES FROM ANOTHER CONTRACT ONBOARD.
22B. SAFETY NOT A FACTOR/MISSION NOT AFFECTED.
22C. NONE
22D. DURING PMS DISCOVERED LEFT CHOKE RING, CATAPULT THREE OUT OF TOLERANCE.
ATTEMPTED TO INSTALL NEW CHOKE RING. RING WOULD NOT THREAD INTO WTR BK CYL. USING
BOTH OLD RING FOR COMPARISON AND APERTURE CARD, QA DISCOVERED THREAD PITCH OF NEW
CHOKE RING INCORRECTLY MANUFACTURED.
22E. PACKING SEEMS SUFFICIENT
22F. PHOTOS TAKEN AND AVAILABLE ON REQUEST.
22G. N/A
22H. ORIGINAL REQ NR: N03305032900322I. A.B. CRUISER, CWO4, ALRE MAINTENANCE
OFFICER, DEPLOYED.
22J. VB03
22K. N/A
22L. N/A //

**Figure 11-10. Sample ALRE CAT II PRODUCT Quality Deficiency Report
Message**

FROM USS SHIP
TO AIG ONE THREE EIGHT EIGHT FIVE//
NATEC SAN DIEGO CA//3.3.A//
UNCLAS //13820//
MSGID/GENADMIN/V-2//
SUBJ/ALRE CAT I TECHNICAL PUBLICATION DEFICIENCY REPORT//
REF/A/DOC/OPNAV/01OCT00//
AMPN/OPNAVINST 4790.15D CHG1//
RMKS/THIS MSG DUAL ACTION FOR NATEC AND NAVAIRWARCENACDIV LKE.
INFO FOR ALL OTHERS.
1. ORIG: USS SHIP (CVN-00) 03300
2. CFA: NAVAIRWARCENACDIV LAKEHURST NJ
3. RCN: N03300008032
4. DATE DISC: 0249
5. NSN: 0851-LP-005-7041
6. THROUGH 21. N/A
22. A. TECH MAN: NA 51-15ABD-2
B. EQUIP MODEL: N/A
C. BASIC PUB DATE: 1 AUGUST 1990
D. CHG DATE/NO: N/A
E. WK PACK NO: N/A
F. PG NO: 3-23
G. PARA NO: 3-39.8
H. FIG NO: N/A
I. APTR CARD NO: N/A
J. APTR CARD DATE: N/A
K. APTR CARD REV: N/A
L. DEF: PARAGRAPH 3-39.8 STATES LAUNCH VALVE STROKE TIMER TIMES
WILL BE DETERMINED USING CSV SETTINGS OF 050, 150, AND 120. CSV
SETTINGS ARE INCORRECT AND SHOULD BE 050, 150, AND 250. ALL OTHER
PARAGRAPHS RELATING TO CSV SETTINGS FOR LAUNCH VALVE STROKE TIMER
TIMES CONFIRM THIS ERROR.
M. REC: CHANGE THE 120 SETTING TO READ 250.
N. POC: R.T. LAUNCHVALVE, LT, ALRE MAINTENANCE OFFICER,
DEPLOYED.//

**Figure 11-11. Sample ALRE CAT I Technical Publications Deficiency
Report Message**

TECHNICAL PUBLICATIONS DEFICIENCY REPORT						
NATEC USE ONLY			a. QA SEQUENCE NUMBER	b. DATA MANAGER CODE	c. FST/PRIME CODE	
1. REPORTING ACTIVITY			2. REPORT CONTROL NO.			
			3. REPORT DATE (YRMODA)	4. WEAPONS SYSTEM APPLICATION		5. DISCREPANCY CODE
6. TECHNICAL MANUAL NUMBER			7. TECH. MAN. DATE	8. CHG. NO. DATE	9. W/P NO.	
10. SEC/PG NO.	11. PARA NO.	12. FIG/TBL NO.	13. CART NO.	14. CART DATE	15. FRAME NO.	
16. DEFICIENCY						
17. RECOMMENDATION						
18. IMPACT						
19. MEDIA EVALUATED: (ONLY ONE CHECK BLOCK IS REQUIRED PER ITEM.)						
<input type="checkbox"/> FILM <input type="checkbox"/> PAPER <input type="checkbox"/> PAPER & FILM						
REMARKS						
20. REPORTED BY (NAME, RANK/RATE)			21. RELEASED BY (NAME, RANK/RATE)			
AUTOVON			AUTOVON			

OPNAV 4790/66 (REV. 2-01)

S/N 0107-LF-983-7800

INSTRUCTIONS ON REVERSE SIDE

Figure 11-12. ALRE Technical Publications Deficiency Report (TPDR)(OPNAV 4790/66) (Front)

INSTRUCTIONS

1. FROM: (Reporting Activity) The Reporting Activity will enter complete mailing address.

2. REPORT CONTROL NUMBER: Enter the Report Control Number (RCN).

3. REPORT DATE: This identifies the year, month, and day that the report was prepared, and consists of six digits. The date 15 June 1989 would be presented in the following format: 890615. The first two digits indicating the year (89), the second two digits indicate the month (06), and the remaining two digits specify the day (15).

4. WEAPONS SYSTEM APPLICATION: Give the specific weapons system against which the deficiency is detected.

5. DISCREPANCY CODE: This is a numeric code used to describe the type of discrepancy found in the technical publication being reported deficient. A complete list of codes are as follows:

1. Typographical Errors
2. Incorrect Procedures
3. Schematic Errors
4. Part Number Errors
5. SM&R Code Errors
6. Illustration Errors
7. Incorrect Values/Tolerances
8. Incorrect References
9. Safety (Cautions & Warnings)
10. Indexing Problems
11. Illegible
12. Print Error (Head to Toe or Information Cut Off)
13. Missing/Improperly Collated Pages
14. Film Density
15. Cartridge Loading (Wrong Film, Cartridge Indexing, No Film, and Inverted Loading)
16. Other

6. TECHNICAL MANUAL NUMBER: Give the complete NAVAIR number assigned to the manual being reported as deficient. Only one Technical Manual should be reported per TPDR

7. TECHNICAL MANUAL DATE: This date appears on the bottom right hand corner of the title page. The date shall be presented in the format described in Item 3.

8. CHANGE DATE AND NUMBER: This appears directly under the basic date of the manual on which the deficiency is located.

9. WORK PACKAGE NUMBER: Enter the number in which the deficiency is located.

10. SECTION/PAGE NUMBER: Enter the number of the page of the technical manual on which the deficiency is located.

11. PARAGRAPH NUMBER: Enter the specific number in which the deficiency is located.

12. FIGURE/TABLE: Enter when an illustration or table is involved in the deficiency.

13. CARTRIDGE NUMBER: Enter the number being reported deficient.

14. CARTRIDGE DATE: The date shall be presented in the format described in Item 3.

15. FRAME NUMBER: Enter the frame number of the cartridge on which the deficiency is located.

16. DEFICIENCY: Be very specific. Provide complete information regarding discrepancy, including drawings, schematics, sketches, and references. If necessary, attach copies.

17. RECOMMENDATION: Be very specific. Provide complete information regarding the corrective action required, including drawings, schematics, sketches, and references. If necessary, attach copies.

18. IMPACT: Enter concise statement of the impact of this discrepancy on work load/operational readiness.

19. MEDIA EVALUATED: Check applicable block for media that is being reported deficient.

20. REPORTED BY: Give name, rate/rank, and autovon number of person reporting deficiency to ensure receipt by reporter of notification of action taken.

21. RELEASED BY: Name, rank/rate, title, and autovon number of releasing official.

MAIL ORIGINAL AND 1 COPY TO:
Commanding Officer, Naval Air Technical Data and Engineering Service Command, Attn: TPDR,
P.O. Box 357031, NASNI, San Diego, CA 92135-7031
COPY TO FLEET SERVICE TEAM

OPNAV 4790/66 (REV. 2-01) (BACK)

Figure 11-13. ALRE Technical Publications Deficiency Report (TPDR) (OPNAV 4790/66) (Back)

(Insert Classif. of TMDER Here and At Bottom of Page) CLASSIFICATION:

NAVSEA (USER) TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER) (NAVSEA S0005-AA-GYD-030/TMMP & NAVSEAINST 4160.3A)										
INSTRUCTION: Continue on 8-1/2" paper if additional space is needed.										
1. USE THIS REPORT TO INDICATE DEFICIENCIES, PROBLEMS, AND RECOMMENDATIONS RELATING TO PUBLICATION. 2. BLOCKS MARKED WITH "*" ARE TO BE FILLED IN BY THE CONTRACTOR BEFORE PRINTING. 3. FOR UNCLASSIFIED TMDERS, FILL IN YOUR RETURN ADDRESS IN SPACE PROVIDED ON THE BACK, FOLD and TAPE WHERE INDICATED, AND MAIL. (SEE OPNAVINST 5510.1H FOR MAILING CLASSIFIED TMDERS.) 4. FOR ADDITIONAL INFORMATION, CALL AUTOVON 551-2976/2968 OR COMMERCIAL 805-982-2976/2968.										
1. NAVSEA TECHNICAL MANUAL NO.*			2. VOL. PART*		3. TITLE*					
4. REV. NO./DATE OR TM CH. NO./DATE		5. SYSTEM/EQUIPMENT NOMENCLATURE			6. SYSTEM/EQUIPMENT IDENTIFICATION (MK/MOD/AN/PART NO.)					
7. USER'S EVALUATION OF MANUAL (Check Appropriate Blocks)										
A. EXCELLENT		B. GOOD		C. FAIR		D. POOR		E. COMPLETE		F. INCOMPLETE
8. GENERAL COMMENTS										
9. RECOMMENDED CHANGES TO PUBLICATION										
PAGE NO. A.	PARA-GRAPH B.	LINE NO. C.	FIG. NO. D.	TABLE E.	F. RECOMMENDED CHANGES AND REASONS TYPE OF PROBLEM (INDICATE SAFETY (S), MAJOR (M), OR MINOR (P))					
					SAMPLE					
10. ORIGINATOR'S NAME AND WORK CENTER (Please Print)				11. SIGNATURE OF 3-M COORDINATOR			12. DATE SIGNED		13. AUTOVON/ COMM. NO.	
14. SHIP HULL NO. AND/OR STATION ADDRESS (DO NOT ABBREVIATE)										
15. THIS SPACE ONLY FOR NSDSA										
A. CONTROL NO.		B. COG ISEA		C. DATE			D. PRIORITY		E. TRANSMITTED TO	
				RECEIVED	FORWARDED	DUE				

NAVSEA 4160/1 (Rev. 10-89) (FRONT) (REPLACES NAVSEA 9086/10, DESTROY STOCK)

Figure 11-14. Technical Manual Deficiency/Evaluation Report (TMDER) (NAVSEA 4160/1) (Rev 10-89)

Report	Criteria	Precedence	When to send
<u>ALRE HMR</u>	<ol style="list-style-type: none"> 1. Part malfunctions or fails; may cause injury or death, or damage to or/loss of aircraft, equipment or facilities. 2. Configuration deficiency is a safety hazard. 3. Urgent assistance required; corrective action needed because of operational requirement. 4. Condition detected allows incorrect installation; system malfunction/failure may occur. 	PRIORITY	Within 24 hours after discovery.
<u>ALRE EI</u>	<ol style="list-style-type: none"> 1. Safety is involved. 2. Additional technical or engineering info for an aircraft mishap investigation. 3. Launch/recovery systems readiness impaired by material reliability. 4. When directed by higher authority 	ROUTINE	Within 3 calendar days after discovery.
<u>ALRE HMR/EI</u>	<ol style="list-style-type: none"> 1. Combination of ALRE HMR and ALRE EI criteria. 2. Safety concerns should be emphasized when submitting this combined report. 	PRIORITY	Within 24 hours after discovery.
<u>ALRE CAT I PQDR</u>	<ol style="list-style-type: none"> 1. New or newly reworked component. 2. Affects safety including injury or death; can cause equipment damage. 	PRIORITY	Within 24 hours after discovery.
<u>ALRE CAT II PQDR</u>	<ol style="list-style-type: none"> 1. Component may cause widespread material or human resource impact. 2. Does not meet criteria for a ALRE CAT I PQDR. 	ROUTINE	Within 3 calendar days after discovery.
<u>ALRE CAT I TPDR</u>	<ol style="list-style-type: none"> 1. Publication deficiency which may cause injury/death or damage equipment. 	PRIORITY	Within 24 hours after discovery.
<u>ALRE CAT II TPDR</u>	<ol style="list-style-type: none"> 1. Does not meet criteria for a ALRE CAT I TPDR. 	ROUTINE (OPNAV 4790/66)	Within 10 working days after discovery.

Figure 11-15. ALRE Discrepancy Reports Matrix

REPORT TYPE	FST ACKNOWLEDGEMENT /RISK ASSESSMENT	GO/NO-GO DECISION	FOLLOW-UP	ACKNOWLEDGE EXHIBIT RECEIPT	INTERIM RESPONSE	FINAL RESPONSE CONCLUSION
HMR	1 DAY	3 DAYS	4-8 DAYS AFTER INITIAL RESPONSE	1 DAY	10 DAYS	30 DAYS
EI	1 DAY	3 DAYS	4-8 DAYS AFTER INITIAL RESPONSE	1 DAY	30 DAYS	30 DAYS
HMR/EI	1 DAY	3 DAYS	4-8 DAYS AFTER INITIAL RESPONSE	1 DAY	10 DAYS	30 DAYS

REPORT TYPE	FORWARD INITIAL RESPONSE	REQUEST EXHIBIT FROM ORIGINATOR	FORWARD INTERIM, OR FINAL REPLY TO SCREENING POINT
ALRE CAT I PQDR	1 DAY FROM RECEIPT OF CAT I PQDR	7 DAYS FROM RECEIPT OF CAT I PQDR	20 DAYS FROM RECEIPT OF CAT I PQDR OR MATERIAL
ALRE CAT II PQDR	3 DAYS FROM RECEIPT OF CAT II PQDR	7 DAYS FROM RECEIPT OF CAT II PQDR	30 DAYS FROM RECEIPT OF CAT II PQDR OR MATERIAL

Figure 11-16. ALRE Fleet Support Team Response Matrix

PRODUCT QUALITY DEFICIENCY REPORT EXHIBIT			
1. REPORT CONTROL NUMBER	2. DATE (YYYY/MM/DD)		3. ORIGINATING ACTIVITY
4. NSN	5. PART NO.		6. SERIAL/LOT/BATCH NO.
7. CONTRACT NO.	8. QTY RECEIVED	9. QTY DEFICIENT	10. ITEM DESCRIPTION
11. COMPLAINT NARRATIVE – WHAT IS WRONG <i>(Continued on back if necessary)</i>			
12. NAME <i>(Last, First, Middle Initial)</i>		13. TELEPHONE <i>(Include area code)</i>	

DD FORM 2332, JAN 1999
WHIS/DIOR, Jan 99

PREVIOUS EDITION MAY BE USED

PRODUCT QUALITY DEFICIENCY REPORT EXHIBIT	
14. SCREENING POINT/DEPOT	
15. DATE EXHIBIT RELEASED (YYYYMMDD)	16. EXHIBIT RELEASED TO
11. COMPLAINT NARRATIVE <i>(Continued)</i> AND REMARKS	

DD FORM 2332, (BACK), JAN 1999

Figure 11-17. Product Quality Deficiency Report Exhibit

(Enter N/A or UNK if not applicable or unknown)

Precedence: <Priority /Routine as applicable>
FROM: <Message Originator PLA>
TO: <NAVAIRWARCENACDIV LAKEHURST NJ>
<AIG ONE THREE EIGHT EIGHT FIVE>
INFO: <Enter PLAs of other activities as applicable>
SUBJ: <Subject> (ex. ALRE MK 7 JBD TUBE ASSY CAT II PQDR)
REFS: <References> (include OPNAVINST 4790.15D CHGx)
AMPN/NARR: <Amplification/Narrative> (amplify the references. Include statement...THIS MSG
ACTION FOR NAVAIRWARCENACDIV LKE. INFO ALL OTHERS//
RMKS/1. <Reporting Custodian>/<UIC> (ex. USS SHIP/12345)
2. <PLA of FST Unit> (ex. NAVAIRWARCENACDIV LAKEHURST NJ)
3. <RCN> (ex. R12345-03-8003)
4. <Julian date/location deficiency discovered> (ex. 03126/DEPLOYED)
5. <Cog Symbol>, <NSN>, <SMIC> (ex. 7RH, 1234-00-123-1234, EY)
6. <Nomenclature> (ex. TUBE ASSY, MK 7 JBD)
7A. <Mfr CAGE>, <Mfr Name>, <City>, <State> (ex. 01234, NOMO MFG CO., ALBANY, NY)
7B. <LRA CAGE>, <LRA Name>, <City>, <State> (ex. 54321, GOOD2GO INC., NEWARK, DE)
7C. <Shipper's Name>, <City>, <State> (ex. A-1 SHIPPERS, NORFOLK, VA)
8. <Manufacturer's part number>, <NAWC PN> (ex. 8765A12, 514309-14)
9. <Serial number>, <Lot or Batch number> (ex. 1234-01, 101)
10A. <Contract Number> (ex. N68335-01-C-1234)
10B. <Purchase Order Number> (ex. N6833599P01234)
10C. <Re-Order Requisition number (Turn-in Doc Nr)> (ex. N0330050329003)
10D. <GBL number> (ex.
11. <New, Repaired, Reworked, Overhauled, Upkeep (from RFI tag)> (ex. REWORKED)
12. <Date manufactured, reworked, or overhauled> (ex. 03 AUG 99)
13. <Operating time at failure>(space)<Measurement Unit> (ex. 120 CATAPULT SHOTS)
14. <Government Furnished Material? (Yes, No, N/A or UNK)> (ex. YES)
15A. <Quantity Received> (ex. 2)
15B. <Quantity Inspected> (ex. 2)
15C. <Quantity Deficient> (ex. 1)
15D. <Quantity In Stock> (ex. 3)
16A. <End Item Nomenclature>, <End Item Serial Number> (ex. MK 7 MOD 1 JBD, N/A)
16B. <NHA NSN>, <NHA Nomenclature>, <NHA Part Number>, <NHA Serial Number>
(ex. 4321-00-321-5432, PANEL ASSY, 617018-33, N/A)
17. <Dollar value of deficient material>(space)DOLLARS, <Man-hours to repair/replace>(space)MHRS,
<Estimated repair cost>(space)DOLLARS (ex. 1500.00 DOLLARS, 3 MHRS, 500.00 DOLLARS)
18. <Hazard Procedure> (ex. MIL-G-12345, TYPE I, CL 3 or N/A)
19. <Item under warranty (Yes, No, N/A or UNK)>, <expiration date> (ex. UNK)
20. <EIC> (ex. 7A1AK00)
21A. <Identify Supply Unit to Ship Exhibit> (ex. USS SHIP SUPPLY)
21B. <Action/Disposition Narrative> (ex. HOLDING EXHIBIT IN V-2 MATERIAL CONTROL PENDING
DISPOSITION INSTRUCTIONS)
22A. <Description of failure/discrepancy>
22B. <How safety of personnel or activity mission is affected>
22C. <Number of similar deficiencies in like items reported by the originating activity>
22D. <How deficiency was detected or confirmed>
22E. <Storage and handling information>
22F. <Indicate if supporting documents will be supplied> (ex. PHOTOGRAPHS AVAILABLE)
22G. <Description of incorrectly identified new material>
22H. <Recommendations/PQDR Requisition Document No.> (for EIs and HMRs: enter N/A)
(for PQDRs: enter/assign requisition doc. number)
22I. <Name, Rank and DSN of ALRE maintenance officer>
22J. <Work Center Code> (ex. VB01)
22K. <N/A> (Enter: N/A)
22L. <N/A> // (Enter: N/A)

Figure 11-18. ALRE EI, ALRE HMR, ALRE PQDR MESSAGE TEMPLATE

12.5 ALRE Tool Control Program (TCP)

12.5.1 The TCP provides a means to rapidly account for all tools after completing a maintenance task, thus reducing the potential for Foreign Object Damage (FOD) mishaps. The TCP is based on accuracy of inventory. The most significant benefit of the TCP is the saving of lives and equipment damage by eliminating tool-induced FOD incidents caused by lost tools. Additional benefits are:

- a. Reduced initial outfitting and tool replacement costs.
- b. Reduced tool pilferage.
- c. Reduced man-hours required to complete each maintenance task.
- d. Assurance that proper tools are available for specific maintenance tasks.

12.5.2 Appendix G contains amplifying information on ALRE Tool Control including the following:

- a. An allowance list for tool containers.
- b. A standard tool list for each container.
- c. Procurement information for tool containers and other associated hardware.

12.5.2.1 COMNAVAIRPAC and COMNAVAIRLANT will implement the TCPL aboard their respective ships.

12.5.2.2 The ALRE maintenance officer shall establish a V-2 division tool control center, which will be a responsibility of the MS Team Leader. The tool control center functions are as follows:

- a. Use standardized tool lists to build and maintain V-2 tool containers as specified in Appendix G. Such tool lists shall be utilized in the conduct of an initial wall-to-wall inventory upon implementation of the TCP, and annually thereafter.

NOTE

ALRE special tools are also subject to examination during the TYCOM Maintenance Management Team audits.

- b. Whenever possible, use approved allowance lists as the reference for tool requisitions.

- c. Initiate all requisitions for replacement tools.
- d. Ensure all tool requests are itemized, and all requisitions are itemized. Blank check DD 1348 requisitions are not authorized.
- e. Ensure that all tool expenditures are recorded.
- f. Maintain custody of all tool containers not signed out on sub-custody.
- g. Require a signature to issue tool containers.
- h. Require a signature to issue individual tools.
- i. Issue initial issue and replacement tools; require turn-in of broken tools for all replacements.
- j. Ensure all tools and containers are properly marked/etched and appropriate inventory procedures maintained.
- k. Bring noted deficiencies and desired changes to the attention of the MS CPO.

12.5.3 Tool Control Containers

12.5.3.1 The silhouette method in conjunction with the inventory list method will be utilized for tool cabinets. Silhouetting has proved ineffective in identifying missing tools from portable toolboxes, particularly at night. Therefore, an inventory list shall be provided in each portable toolbox. The inventory list is required for portable toolboxes and tool pouches for accountability of all tools.

12.5.3.2 A standardized tool list is specified in Appendix G for most maintenance task and includes a sufficient quantity of the necessary tools to perform the assigned maintenance tasks. The tool list will show the specific tool inventory required for each container.

12.5.3.3 A unique family of tool containers is designated for tool control. The container exterior will clearly identify the work center/work package and organization. The tools within the containers shall be identified to comply with Appendix G and have the organization etched on the tool.

NOTE

ALRE maintenance officers may tailor the contents of individual toolboxes to conform to their ship's equipment maintenance requirements. All other requirements of the Tool Control Manual remain in effect.

BUPERSBureau of Naval Personnel

CAFSUCarrier and Field Service Unit

CANTRACCatalog of Navy Training Courses

CASREPCasualty Report

CASCORCasualty Correct

CCFConfiguration Change Form

CDICollateral Duty Inspector

CDPCross Deck Pendant/Course Data Processing

CDQAICollateral Duty Quality Assurance Inspector

CFACognizant Field Activity

CFFCCommander, Fleet Forces Command

CISCommercial Industrial Services

CNAFCommander, Naval Air Forces

NETCNaval Education and Training Command

CNATTCenter for Naval Aviation Technical Training

CNATT DETCenter for Naval Aviation Technical Training
Detachment

CNATTUCenter for Naval Aviation Technical Training
Unit

CNOChief of Naval Operations

COHComplex Overhaul

COMCARGRUCommander, Carrier Group

COMNAVAIRLANTCommander, Naval Air Force, U.S. Atlantic
Fleet

COMNAVAIRPACCommander, Naval Air Force, U.S. Pacific Fleet

COMNAVAIRSYSCOMCommander, Naval Air Systems Command

COMNAVSEASYS COM Commander, Naval Sea Systems Command

COMNAVSUPSYSCOM Commander, Naval Supply Systems Command

COSAL Coordinated Shipboard Allowance List

CR IPL Consolidated Remain-in-Place List

CROV Constant Run Out Valve

CSI Critical Safety Item

CSMP Current Ship's Maintenance Project

CV Aircraft Carrier

CVN Aircraft Carrier, Nuclear

DCNO Deputy Chief of Naval Operations

DLA Defense Logistics Agency

DLSC Defense Logistics Service Center

DNEC Distribution Navy Enlisted Classification

DOD Department of Defense

DODAAC Department of Defense Activity Address Code

DON Department of the Navy

DOP Designated Overhaul Point

DPIA Docking Planned Incremental Availability

DRP Designated Repair Point

DSN Defense Switched Network

DSP Depot Support Point

ECP Engineering Change Proposal

EDVR Enlisted Distribution Verification Report

EER Emergency Essential Repair

EHR Equipment History Card

EIEngineering Investigation

EICEquipment Identification Code

ESWBSExtended Ships Work Breakdown Structure

EMElectrician's Mate

FADForce/Activity Designator

FASOTRAGRUFleet Aviation Specialized Operational
Training Group

FCAField Calibration Activity

FMPFleet Modernization Program

FODForeign Object Damage

FSCMFederal Supply Code for Manufacturers

FTCFleet Training Center

HM&EHull, Mechanical and Electrical

HMRHazardous Material Report

HPRRHuman Performance Requirement Review

ICInterior Communications

ICPInventory Control Point

IDPLInstalled/Discrepant Parts List

ILARTSIntegrated Launch and Recovery Television
Surveillance System

ILSIntegrated Logistics Support

ILSMTIntegrated Logistics Support Management Team

IMAIntermediate Maintenance Activity

INSURVBoard of Inspection and Survey

IOLInitial Outfitting List

IRAC Interim Rapid Action Change

ISRA Incremental Selected Restricted Availability

JCN Job Control Number

JSN Job Sequence Number

LIRSH List of Items Requiring Special Handling

LRB/LRC Ship Installed and Expeditionary Airfield
Aircraft Launch, Recovery and Visual Landing
Aid Bulletin/Change

M/C Maintenance Control

MAF Maintenance Action Form

MDS Maintenance Data System

METCAL Metrology and Calibration

MI Maintenance Instruction

MILSTRAP Military Standard Transaction Reporting and
Accounting Procedures

MILSTRIP Military Standard Requisition and Issue
Procedures

MIM Maintenance Instruction Manual

MIP Maintenance Index Page

ML-N Management List, Navy

MR Maintenance Requirement

MRC Maintenance Requirement Card

MRIL Master Repairable Item List

MS-DOS Microsoft-Disc Operating System

MS Maintenance Support Branch

MTIP Maintenance Training Improvement Program

NAMSO Navy Maintenance Support Office

NAMDRPNaval Air Discrepancy Reporting Program

NATTCNaval Air Technical Training Center

NAVAIRSYSCOMNaval Air Systems Command

NAVAIRTECHSERFACNaval Air Technical Services Facility

NAVAIRWARCENACDIV ...Naval Air Warfare Center Aircraft Division

NAVAVNDEPOTNaval Aviation Depot

NAVCALABNavy Calibration Laboratory

NAVICPNaval Inventory Control Point

NAVSEALOGCENNaval Sea Logistics Center

NAVSHIPREPFACNaval Ship Repair Facility

NDINon-destructive Inspection

NECNavy Enlisted Classifications

NIINNational Identification Item Number

NITRASNavy Integrated Training Resources and
Administration System

NOTALNot to All

NPDCNaval Personnel Development Command

NSNNational Stock Number

NAVSHIPYDNaval Shipyard

NTPNavy Training Plan

OJTOn-the-Job Training

OMMSOrganizational Maintenance Management System

OPNAVOffice of the Chief of Naval Operations

OPTAROperating Target Funds

OSIOperating Space Item

PERA (CV)Planning and Engineering for Repairs and
Alterations of Aircraft Carriers

PIAPlanned Incremental Availability

PMEPrecision Measuring Equipment

PMSPlanned Maintenance System

POCPoint Of Contact

PQDRPriority Quality Deficiency Report

PQSPersonnel Qualification Standards

PSICPProgram Supply Inventory Control Point

QAQuality Assurance

QAIQuality Assurance Inspector

QDRQuality Deficiency Report

RACRapid Action Change

RAVRestricted Availability

READSUPPGRUReadiness Support Group

RFIReady for Issue

SESupport Equipment

SECASShip Equipment Configuration Accounting System

SECNAVSecretary of the Navy

SFWPShip's Force Work Package

SHIPALTShip Alteration

SIShip Installation

SIMAShore Intermediate Maintenance Activity

SM&RSource, Maintenance, and Recoverability Code

SMDShip's Manning Document

SME Subject Matter Expert

SRA Selected Restricted Availability

SSC Supply Support Center

SUPSHIPS Supervisor of Shipbuilding, Conversion, and
Repair

SWLIN Ship's Work Line Item Number

TAD Temporary Additional Duty

TAT Turn-Around-Time

TAV Technical Availability

TCP Tool Control Program

TCPL Tool Control Plan

TD Technical Directive

TMDER Technical Manual Deficiency/Evaluation Report

TPDR Technical Publication Deficiency Report

TPL Technical Publications Library

TYCOM Type Commander (COMNAVAIRLANT/PAC, etc.)

UIC Unit Identification Code

UMMIPS Uniform Material Movement and Issue Procedures

UND Urgency of Need Designator

UPS Uninterruptible Power Supply

VIDS Visual Information Display System

VIDS/MAF Visual Information Display System/Maintenance
Action Form (OPNAV 4790/60)

VLA Visual Landing Aid

VR Voyage Repair

VRTVoyage Repair Team
W/CWork Center
WESTPACWestern Pacific
WDCWork Definition Conference
WSFWeapon System File

CATAPULT MAINTENANCE ACTION									
CATAPULT NO. _____					DATE _____				
JSN _____									
SHOT NO. _____					SHOTS SINCE LAST INSP. _____				
ROTO LAUNCHING VALVE DRY CYCLE DATA									
DRY CYCLE COMPARISON (NORMS)									
DATE TESTED _____ LV TEMP _____ °F HYD PRESS _____ PSI HYD TEMP _____ °F									
CSV SETTING	50	100		150		250		300	
CLOCK TIMES	1 _____	1 _____	2 _____	1 _____	2 _____	1 _____	2 _____	1 _____	2 _____
DRY CYCLE AVERAGES									
DATE TESTED _____ LV TEMP _____ °F HYD PRESS _____ PSI HYD TEMP _____ °F									
CLOCK TIMES (INCREASING CSV)									
CYCLE	CSV 050 CLK 1	CSV 100 CLK 1 CLK 2		CSV 150 CLK 1 CLK 2		CSV 250 CLK 1 CLK 2		CSV 300 CLK 1 CLK 2	
1									
2									
3									
4									
5									
AVG									
(NOT TO BE USED FOR ESTABLISHING NORMAL DRY CYCLE CLOCK TIMES)									

Figure E-5. Roto Launching Valve Dry Cycle Data (Sheet 1 of 2)

REMARKS: (INCLUDE REASON FOR ESTABLISHING NEW NORMS, IF APPLICABLE)

MAINT MAN _____ W/C SUPERVISOR _____

Q/A INSPECTOR _____ MAINT. CHIEF/OFFICER _____

Figure E-6. Roto Launching Valve Dry Cycle Data (Sheet 2 of 2)

Appendix F

ALRE Technical Manuals

ALRE TECHNICAL MANUALS	
MANUAL NUMBER	MANUAL TITLE
NA 00-25-100	TECHNICAL MANUAL PROGRAM
NA 00-25-300	NAVAIRSYSCOM TECHNICAL DIRECTIVES SYSTEM
NA 00-25-700	TECHNICAL MANUAL PREPARATION GUIDE FOR TECHNICAL WRITERS
NA 00-80R-14	AIRCRAFT FIREFIGHTING AND RESCUE MANUAL
NA 00-80R-14-1	AIRCRAFT EMERGENCY RESCUE INFORMATION MANUAL
NA 00-80T-105	CV NATOPS MANUAL
NA 01-1A-8	AIRCRAFT STRUCTURAL HARDWARE MANUAL
NA 01-1A-16	NONDESTRUCTIVE INSPECTION METHODS
NA 01-1A-17	AVIATION HYDRAULICS MANUAL
NA 11-75DA-1	RELEASE HOLDBACK BAR ASSY F-14
NA 11-75DA-2	REPEATABLE RELEASE HOLDBACK BAR ASSY F-14
NA 51-15ABB-4.1	O&I LEVEL MAINT WITH IPB FOR SHIPS STEAM CATAPULTS VOL 1
NA 51-15ABB-4.2	O&I LEVEL MAINT WITH IPB FOR SHIPS STEAM CATAPULTS VOL 2
NA 51-15ABB-4.3	O&I LEVEL MAINT WITH IPB FOR SHIPS STEAM CATAPULTS VOL 3
NA 51-15-ABC-4	FORWARD ICCS OPERATION
NA 51-15-ABC-5	DECKEDGE ICCS OPERATION, MAINTENANCE, & IPB
NA 51-15ABD-2	OVERHAUL INSTRUCTION (DEPOT) FOR ALL STEAM CATAPULTS
NA 51-15ABD-3	IPB FOR ALL STEAM CATAPULTS
NA 51-15ABE-2	O&I LEVEL MAINT WITH IPB DIGITAL ENDSPEED INDICATOR
NA 51-15ABF-1	O,I,D LEVEL MAINT WITH IPB AIRCRAFT LAUNCHING ACCESSORIES
NA 51-15ABG-1	O,I,D LEVEL MAINT WITH IPB FOR CARVER PUMP CO. CATAPULT WATER BRAKE PUMP
NA 51-5BBA-2.1	IPB FOR ALL SHIPBOARD AIRCRAFT RECOVERY EQUIPMENT
NA 51-5BBA-2.2	IPB FOR ALL SHIPBOARD AIRCRAFT RECOVERY EQUIPMENT

ALRE TECHNICAL MANUALS	
MANUAL NUMBER	MANUAL TITLE
NA 51-5BCA-3.1	OVERHAUL (DEPOT) ALL SHIPBOARD AIRCRAFT RECOVERY EQUIPMENT
NA 51-5BCA-3.2	IPB FOR ALL SHIPBOARD AIRCRAFT RECOVERY EQUIPMENT
NA 51-25-3	VICKERS PUMP
NA 51-25-20	CATAPULTS LAUNCHING ENGINE LIFTING CYLINDER
NA 51-40ABA-10	FLOLS, FRESNEL LENS OPTICAL LANDING SYSTEM, VOL I
NA 51-40ABA-10.1	FLOLS, FRESNEL LENS OPTICAL LANDING SYSTEM, VOL II
NA 51-40ABA-11	FLOLS, FRESNEL LENS OPTICAL LANDING SYSTEM, IPB
NA 51-40ABA-21	IFLOLS, IMPROVED FRESNEL LENS OPTICAL LANDING SYSTEM, IPB
NA 51-40ABA-22	IFLOLS, IMPROVED FRESNEL LENS OPTICAL LANDING SYSTEM, OVERHAUL MANUAL
NA 51-40ACA-2	VLA, MANUALLY OPERATED VLA SYSTEM (SHIPBOARD)
NA 51-50ABA-6	LRLS, LONG RANGE LINE-UP SYSTEM, IPB
NA 51-50AAA-1	VLA, INSTALLATION FLIGHT DECK LIGHTING FOR VLA (SHIPBOARD)
NA 51-50ABA-2	VLA ON CV SHIPS
NA 51-60-7	ELECTRONIC CROSSHAIR STABILIZATION SYSTEM (ECSS)
NA 51-70-13	JBD, MK 7 MOD 0, MK 7 MOD 1, MK 7 MOD 2
A1-436-AC-130-010	REPEATABLE RELEASE HOLDBK ASSY F/A-18
AM-410AA-MAN-000	WMIS, SHIPBOARD WIND MEASURING/INDICATING SYSTEM
AM-410AB-MAN-000	WMIS, SHIPBOARD WIND MEASURING/INDICATING SYSTEM
AM-420AD-MAN-000	WMIS, CROSSWIND/HEADWIND COMPUTER
NA 0912-LP-005-8010	SHIPBOARD WINDOW WIPERS, DECKEDGE ICCS DOME
NA 0912-LP-005-7010	SHIPBOARD WINDOW WIPERS, FORWARD ICCS DOME
NS 0947-LP-152-7010	CATAPULTS WATER BRAKE COOLING PUMP
NAWCADLKE-48J500-0007	ALRE I/DPL ADP PROGRAM USERS MANUAL
NAWCADLKE-48J500-0009	ALRE AUTO SHOT/RECOVERY LOG ADP PROGRAM USERS MANUAL

ALRE TECHNICAL MANUALS	
MANUAL NUMBER	MANUAL TITLE
NS 0947-LP-153-4010	CATAPULTS WATER BRAKE PUMP
NS 0947-LP-161-4010	CATAPULTS, CIRCULATING CATAPULT HYDRAULIC FLUID PUMP
NS 0948-LP-069-8010	GLOBE VALVE, TYPE Y
NS 0910-LP-112-9400	CATAPULTS, CONTROL VALVE FOR ACCESSORY FILL AND BLOWDOWN SYSTEM
NS 0965-LP-108-9010	WMIS, WIND IND EQUIP OPS AND MAINT MANUAL
NS 0983-LP-002-7010	ICCS, HEATED DE-ICING WINDOW FORWARD ICCS
NS 0983-LP-002-8010	CATAPULTS, HYDRAULIC FLUID COOLER
NS 9587-AD-MMM-010	ICCS, FORWARD ICCS
NS 9587-AE-MMM-010	ICCS, DECK EDGE ICCS

NOTES

1. Publications listed in this appendix are required for a CV/CVN ALRE Technical Publications Library, subject to a ship's installed equipment configuration. Applicable aperture cards, service bulletins, service changes and repair procedures shall also be held.

2. Refer to CDROM NAVSUP PUB 600 (NLL) on Naval Logistics Library Web site.

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APPENDIX G
SECTION I
INTRODUCTION

1-1 PURPOSE

The purpose of this appendix is to present the Tool Control Program (TCP) for Aircraft Launch and Recovery Equipment (ALRE) aboard all aircraft carriers. The prime objective of the Tool Control Program is the prevention of Foreign Object Damage (FOD)-related aircraft and support equipment mishaps which have been caused by factors of tools adrift. Additional benefits that will be realized by compliance with the procedures contained herein are the reductions of pilferage, initial outfitting costs, in-use inventories, tool replacement cost, and maintenance man-hours. All of these reductions make significant contributions to cost effectiveness.

1-2 SCOPE

Information presented in this appendix includes procedures, methods and detailed instructions for the operation, or the program duties of key personnel, tool matrix, material list, container identification and fixture fabrication instructions. Tool inventories are also included. The procedures contained herein have been tried, proven practical, and are considered essential for positive control and accountability of tools.

1-3 CONCEPT

The Tool Control Program is based on the concept of a family of specialized toolboxes and pouches configured for instant inventory before and after each maintenance action. The content and configuration of each container is tailored to the task, work center, and equipment maintained. Work center containers are assigned to, and maintained within a work center. Other boxes and specialized tools are checked out from the Tool Control Center (Tool Room).

1-4 USE OF THIS APPENDIX

- a. Section II includes the procedures and details for the establishment and operation of the program.
- b. Section III is a composite list of materials by stock number and/or part number.
- c. Section IV describes and illustrates the six

types of containers utilized in the program.

d. Section V provides detailed instruction for cutting and forming unplasticized polyvinyl chloride (UPVC) sheet plastic into various brackets and holders used in box configuration. Illustrations of clip, spring tension and clip, socket wrench are included.

e. Section VI is Special Tool Listings.

NOTE

**Sheet metal or aluminum may be used in place of UPVC.
Pop rivets may be used to mount brackets and holders,
except for finger clips which require self-tapping screws.**

SECTION II
ESTABLISHING AND OPERATING
INSTRUCTIONS

2-1 ESTABLISHING

The ALRE Maintenance Officer shall assign personnel and ensure the monitoring of the following:

(1) Establish a Tool Control Center (Central Tool Room) in V-2 Division under the responsibility of the Maintenance Support (MS) Branch Supervisor.

(2) Select and appoint the Division Tool Control Coordinator (Tool Control Center Leading Petty Officer). This individual must be aggressive, industrious and, above all, a dedicated Senior Petty Officer. The success of the program rests ultimately upon their shoulders. The Division Tool Control Coordinator is the key figure in the coordination of inventories, and the acquisition of tools and materials to support the program.

(3) Assign additional personnel to the Tool Control Center to be dedicated full time to fabricating boxes. Note: the number of personnel assigned to this duty can be adjusted as the program nears full support capability. These personnel should learn, in a short period of time, how to construct boxes of good quality and they should be utilized to construct the majority of the boxes required.

(4) Fabricate containers using information provided by this appendix. Stock containers as they are made using any excess tools within the division and purchase only individual tools necessary to complete the makeup of the boxes. Ensure tools are serialized as they are installed. A tool inventory list by serial number must be provided within each container. The Tool Control Coordinator shall maintain a master inventory for all containers. As the containers are completed, they should be inventoried, sealed, and locked. The date and signature of the inventorying Petty Officer should be written on the seal. The container should then be stowed in the Tool Control Center awaiting implementation.

(5) Etch tools with division identification using one of the following identification, work center, and container etchers:

- Electric Arc, NSN 5130-00-596-1062

- Electric Vibrator, NSN 5130-00-596-8404
 - Etch-O-Matic, open purchase from:
 - Martronics Corporation
 - 500 Wilcoxs Rd.
 - Salkum, WA 98582
 - (360) 985-2999
- Starter kit price \$49.95 with instructions.

(6) Prepare and publish a Maintenance Instruction assigning responsibilities and defining tasks required to support the program.

(7) Commence training for all personnel based on the Maintenance Instruction describing all individual responsibilities for the establishment and operation of the program. An "all hands" effort should be strongly enforced.

(8) Identify and stow all supplemental and special tools within the Tool Control Center.

(9) Identify and order spare tools to ensure containers can be maintained.

(10) Issue boxes, which will be retained by the work center. Work centers should only retain tools required for normal daily tasks. The work center pre-op/post-op boxes should be adequate.

2-2 OPERATION

To ensure the effectiveness of the program certain duties and responsibilities must be carried out on a continuing basis.

a. The Maintenance Support Supervisor shall:

(1) Screen all requisitions for issue of tools, ensuring requests are itemized.

(2) Do not allow substitutions.

(3) Record all expenditures for tools and submit to the ALRE Maintenance Officer a monthly memorandum indicating monetary value of replaced, missing , or broken tools.

(4) Keep accurate inventory records.

(5) Manage the Tool Control Center.

b. The Tool Control Center Supervisor shall:

(1) Issue tools, containers, and special tools on a signature basis only:

(a) When a special tool (i.e., seldom used, large, torque wrench, etc.) is issued to supplement a container, utilize the tool tags from that container to account for the item(s).

(b) A chit/logbook signature will be used for accountability if special tool is issued as other than supplement for a container.

(2) Issue replacements for tool(s) determined in damaged condition.

(3) Procure replacement tools.

(4) Assist maintenance personnel in any aspect of the Tool Control Program.

c. The Tool Control Center Custodian will:

(1) Upon receipt of a locally-prepared tool chit, (Sample, Fig G-1) from maintenance control, issue appropriate tool/tool container to the assigned supervisor/maintenance technician after joint sight inventory. Shortages of inventory will be noted.

(2) Upon completion of the maintenance action, a joint inventory shall again be conducted and the ALRE MAF shall be signed indicating all tools have been accounted for. The locally prepared tool chit will be attached to the ALRE MAF and will be maintained as follows:

Corrective Maintenance Action: Locally prepared tool chits will be retained by Quality Assurance for a period of 1 year.

Preventive Maintenance Action: Only the tool chit for the most recent. PMS action needs to be retained.

(3) Conduct an immediate search for any missing tool. Notify the Maintenance Officer or Maintenance Control Supervisor immediately if the tool cannot be found.

(4) The Maintenance Officer or Maintenance Control Supervisor will direct an investigation to the depth necessary to determine that the tool is not in a hazardous location before the applicable equipment is returned to an up status. In the event the tool cannot be found, the Quality Assurance Inspector shall personally sign off the locally-prepared tool chit indicating the missing tool poses no potential hazard.

(5) Upon Maintenance Officer's direction replace missing or broken tools, (with proper serialization) in tool boxes requiring replacement tools.

(6) At any crew changes of working periods (i.e., day/night shifts) the off-going Tool Control Center Custodian must conduct a sight inventory of all tool containers with the on-coming Tool Control Center Custodian. Discrepancies should be resolved at that time. Upon completion of the maintenance task, the ALRE MAF shall be signed indicating that all tools have been accounted for.

ALRE TOOL CONTROL INVENTORY SHEET				
WORK CENTER _____		JSN _____		DATE _____
TOOL CONTAINER/ TOOLS CHECKED OUT	CHECKED OUT/INVENTORIED BY (MAINTENANCE PERSONNEL)	INVENTORIED BY (TOOL CONTROL PO)	CHECKED IN BY (MAINTENANCE PERSONNEL)	INVENTORIED BY (TOOL CONTROL PO)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
<div style="font-size: 2em; font-weight: bold; margin: 0;">SAMPLE</div>				
<div style="display: flex; justify-content: space-between;"> LOST/BROKEN/MISSING TOOL REPORT REQUIRED ? YES <input type="checkbox"/> NO <input type="checkbox"/> </div>				

CORRECTIVE MAINTENANCE ACTION: RETAIN WITH MAF FOR ONE YEAR.
 PREVENTIVE MAINTENANCE ACTION: RETAIN WITH MOST RECENT PMS ACTION MAF.

Figure G-1. SAMPLE TOOL CONTROL INVENTORY SHEET

SECTION III
MATERIALS

3-1 INTRODUCTION.

Table G-1 is a listing of materials currently in use in the *ALRE Tool Control Program. Procure items through the normal supply system except for those which no *NSN has been established. These items must be open purchased through a local outlet.

Table G-1. Materials

Nomenclature	Part No.	NSN
Tool Cabinet, Repair "F"	6SE00570-1	9Q 5140-00-124-5644
Tool Cabinet, Repair "G"	6SE00570-2	9Q 5140-00-124-5693
Tool Box Portable Briefcase, Style "A"	6SE01085	9Q 5140-01-154-3870
Tool Box Portable Three Panel, Small "B"	6SE01086	9Q 5140-01-154-3868
Tier, Small*	6SE01088	No NSN/Do Not Order
Tier, Large*	6SE01089	No NSN/Do Not Order
Tool Box Portable Three Panel, Large "C"	6SE01087	9Q 5140-01-154-3869
Retainer Tool 1/4" (18" Length)**	4SE00566-1	9Q 5140-00-124-5718
Retainer Tool 3/8" (18" Length)**	4SE00566-2	9Q 5140-00-124-5613
Frame/Caster Assembly Tool Cabinet	5SE00702-1	9Q 5140-00-124-5634
Clip, Socket Wrench- 1/4" Drive	A-271(55719)	9Z 5340-00-124-5273
Clip, Socket Wrench - 3/8" Drive	A-272(55719)	9Z 5340-00-124-5274
Clip, Socket Wrench - 1/2" Drive	A-273(55719)	9Z 5340-00-124-5275
Clip, Socket Wrench- 3/4" Drive	A-274A(55719)	9Z 5340-00-124-5276
Mounting Strip, Socket Wrench, 16-3/4"***	A-270(55719)	9Z 5340-00-124-5272
Clip, Spring Tension, 1"to 1-7/8- cap., nickel plated	2-B	9Z 5340-00-847-0102
Clip, Spring Tension, 5/8" to 1-1/4" cap., nickel plated	1-B	9Z 5340-00-801-7545
Clip, Spring Tension, 5/16" to 3/4" cap., nickel plated	O-B	9Z 5340-00-584-9400
Clip, Spring Tension, 7/8" to 1-1/4" cap., nickel plated	88	9Z 5340-01-005-3118
Clip, Spring Tension, 9/16" to 7/8" cap., nickel plated	68	9Z 5340-00-329-2136
Clip Spring Tension, 5/16" to 9/16" cap., nickel plated	48	9Z 5340-00-854-6701

* Box will come with appropriate tier

** Cut to required length

Table G-1. Materials (Contd.)

Nomenclature	Part No.	NSN
Clip, Spring Tension, 3/16" to 3/8", cap., nickel plated	28	9Z 5340-00-835-3638
Screws, Self-Tapping, #6, 3/8"		5305-00-969-6914
Screws, Self-Tapping, #6, 1/2"		5305-00-883-0633
Screws, Self-Tapping, #6, 5/8"		5305-00-883-0635
Rubber Sheet, Cellular 24"X 24" X 1"		9320-00-526-6900
Herculite (Pouch Material)		8305-00-926-1587
Tape Fastener Hook 1"		8315-00-106-5973
Tape Fastener Pile 1"		8315-00-106-5974
Adhesive Scotch Grip 847		8040-00-033-7507

SECTION IV
CONTAINER DESCRIPTIONS AND TYPICAL USES

4-1 CONTAINER TYPES AND UTILIZATION

a. The pouch is locally fabricated from canvas, nylon, or herculite material and may be equipped with a belt loop or strap. The belt pouch will usually carry 10 to 12 tools. A flap secured with Velcro tape keeps tools from falling out. Figure G-2 shows a typical layout and Figure G-3 shows the pouch in the closed position.

b. DWG No. 6SE01085 Toolbox, Portable Briefcase Style "A", shown in Figure G-4 has two panels each measuring 11-1/2 X 18 inches. Approximately 30 tools can be mounted with retainer, spring clips or a combination thereof. This container of tools is used primarily by maintenance technicians in performing minor tasks.

c. DWG NO. 6SE01086 Tool Box, Portable Three Panel, Small "B", shown in Figure G-5, DWG No. 6SE01088 with tier has two door panels measuring 12 X 18 inches and a center section three level tiered insert. This box will hold approximately 70 tools and is used to accomplish task such as PMS, monthly or requirement checks. The layout drawing of this box has the vertical and horizontal panels shown in the same plane for simplification.

d. DWG No. 6SE01087 Tool Box, Portable Three Panel Large "G", shown in Figure G-5, with DWG No. 6SE01089 with tier is of the same basic design as the small box except larger. The approximate outside dimension are 17 x 22 x 8 inches. This box will hold about 100 tools of average size. It is used on more extensive PMS checks such as launching engine inspection, or repacking MEC. As with the small box, the layout drawings show all vertical and horizontal surfaces in one plane. These are designated panels A through J.

e. DWG No. 6SE00570-1 Tool Cabinet, Repair "F", shown in Figure G-6, is 2 feet square with doors closed. The doors are 3 inches deep the center section is 9 inches deep. It has a two-level tier in the center section; a 5 inch high tier and a shelf in each door. The layout drawings have been extended in height in order to show the horizontal surfaces of the tiers and the shelves. This cabinet can be

made portable by the use of a frame and caster assembly. This cabinet is typically used for work center pre-operational and post operational inspections and holds tools for both topside and below decks.

e. Tool Cabinet, Repair "G", P/N 6SE00570-2, is the same except for larger dimensions. This cabinet is 3 feet square and with doors closed is 1 foot thick. It is used as a shop box and may be mounted on a wall or bench. As with the "F" cabinet, the layout drawings have been extended in height in order to show the horizontal surfaces of the tiers and the door shelves.

4-2 CONTAINER AND TOOL MARKING

Each container will be marked to identify Division, box type and box number. For example, V2-11-02 indicates the box belongs to V-2 Division, is a type eleven, and the second of a series. Each tool will be marked with the box information plus the location (panel) and the tool item number within that box. For example, V2-11-02-B-6 means box information plus panel B, item number 6.

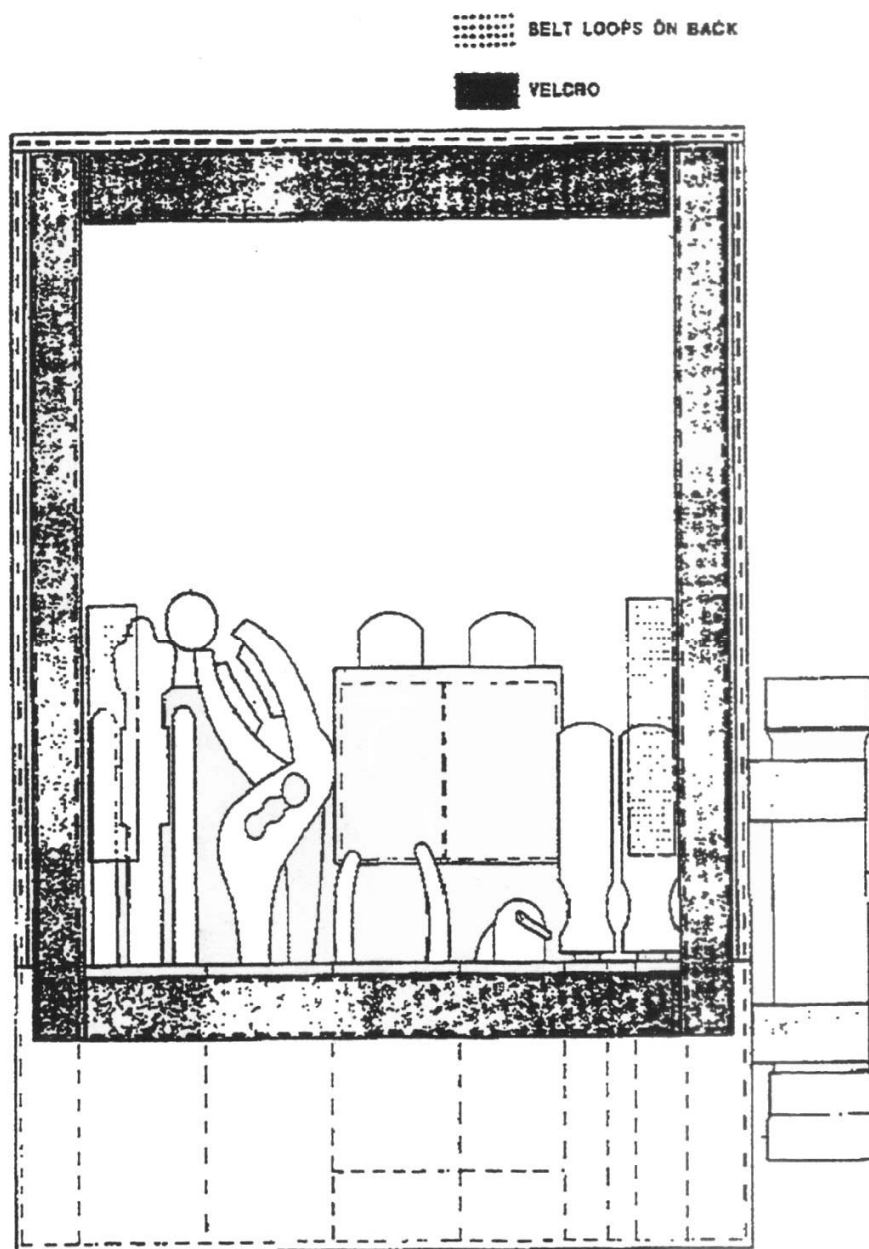


Figure G-2. Tool Pouch (Typical)

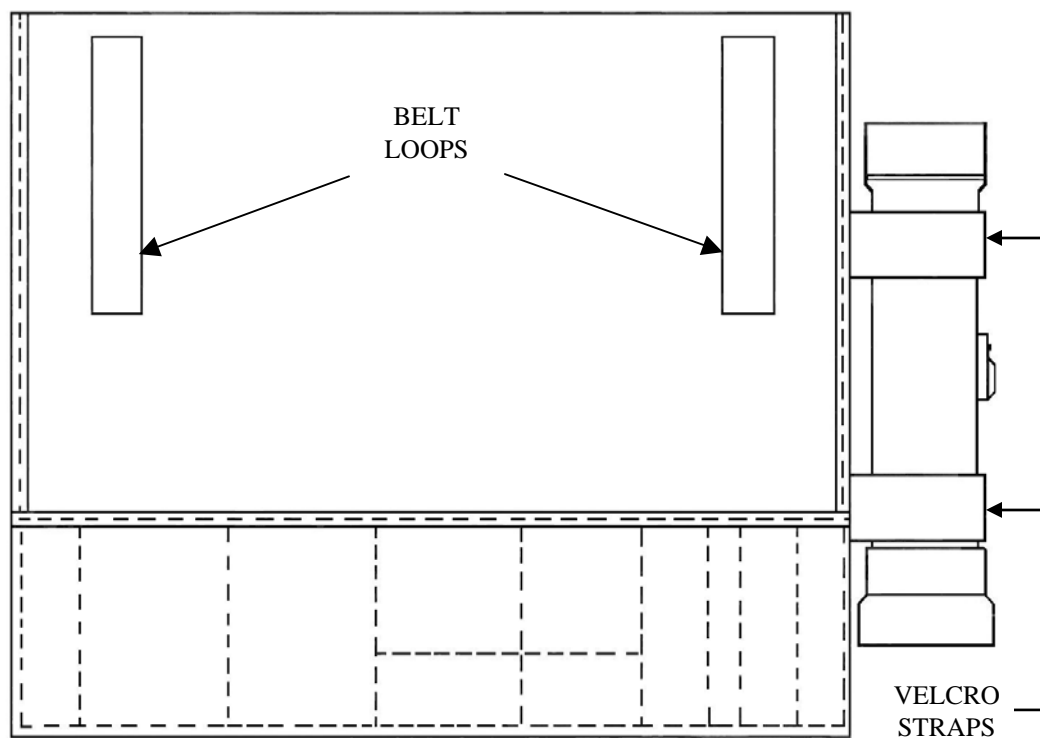


Figure G-3. Tool Pouch Closed (Typical)

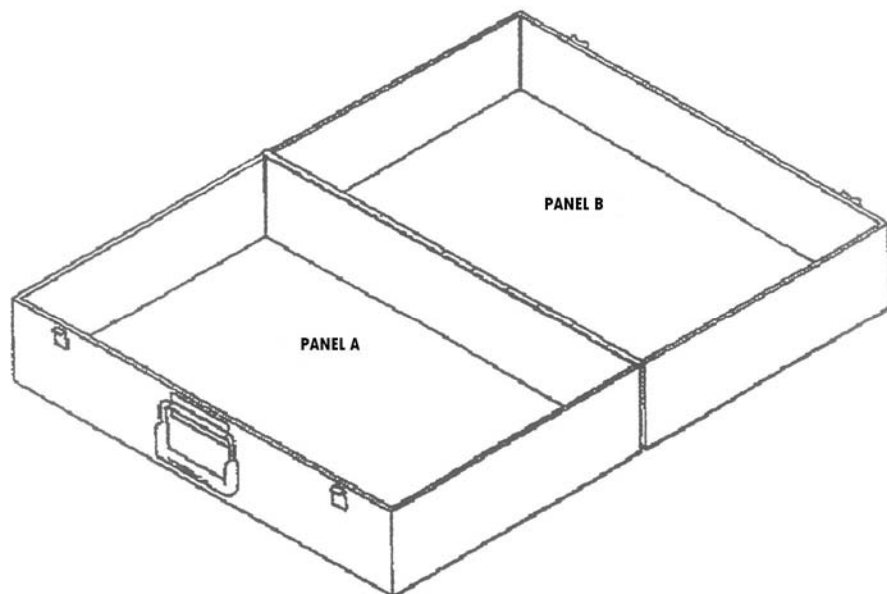


Figure G-4. Tool Box Portable, Briefcase style "A"

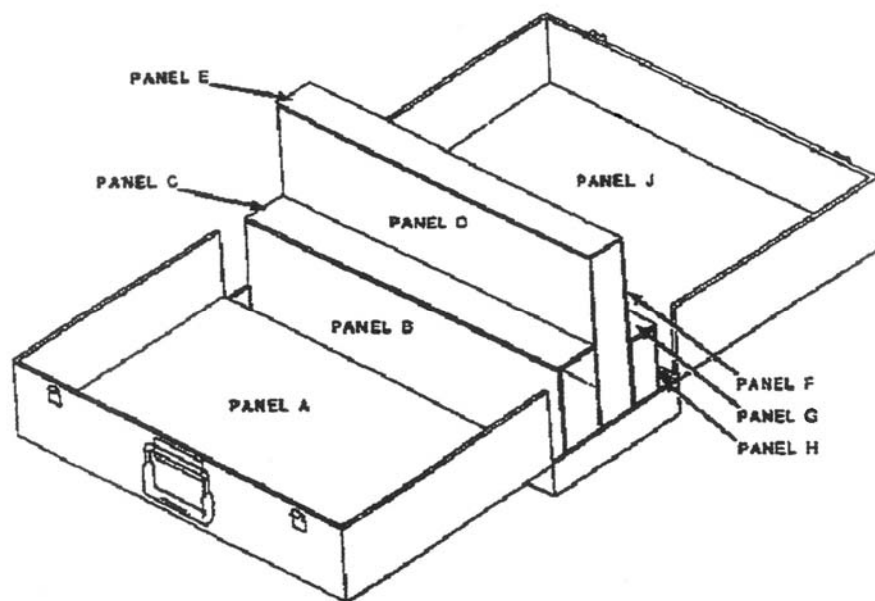


Figure G-5. Tool Box Portable, Briefcase, Three Panel,
Small "B" and Large "C"

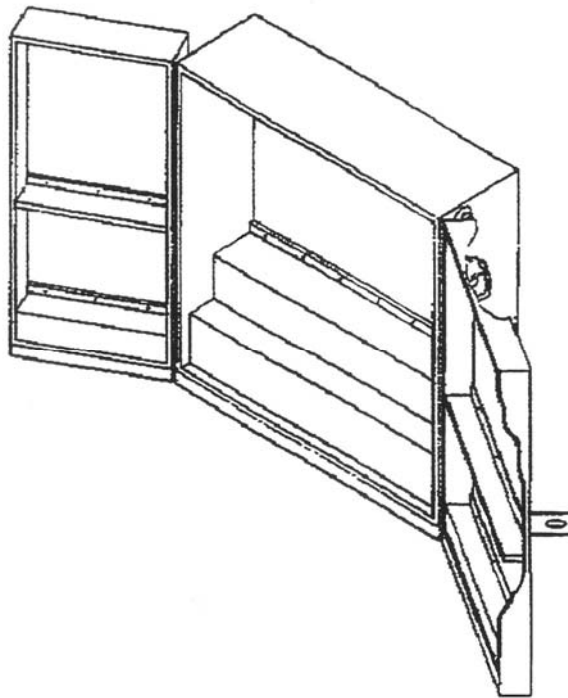


Figure G-6. Tool Cabinet, Repair "F" and "G"

SECTION V
COINTAINER HARDWARE

5-1 INTRODUCTION

The mounting brackets, fittings and clips required to assemble tool containers are described and illustrated in this section. The container layouts in Section VI, and subsequent sections, show where these fittings and brackets are used and tool inventories are keyed to the respective figure illustrated by Figures G-7 through G-26.

5-2 HARDWARE DESCRIPTION AND FABRICATION

a. Drawings of the various tool holders, brackets and clips are shown in Figures G-7 through G-26. The spring clips, socket clips and mounting strips are obtained through normal supply channels. The mounting strip can be cut to the desired length and drilled for mounting with screws. Other holders and brackets are locally fabricated from one-eighth inch sheet unplasticized vinyl chloride (UPVC) material which is available from local outside sources and must be open purchased. These items are easily made by hand, using heat to bend or by cutting to the shape desired. Heating the UPVC is accomplished by using a Heat Gun (NSN 4940- 00-357-1369) or heating over an electric heater (NSN 4520-00-865-5939) along the area to be bent.

b. When a flexible state is reached place the plastic over the edge of a bench or table and using a piece of 90-degree angle iron press down and hold until the plastic cools. Applying pressure to the angle iron will give a sharper bend. In some cases it may be necessary to use blocks of wood and clamps to get the desired shape. UPVC material can be cut by deep scribing with a plastic knife, or scribe and breaking, or may be sawed with a hacksaw. A tool found to be useful in cutting holes and grinding is a rotary electric tool (NSN 5130-01-014-6856) which comes as a kit.

5-3 HOLDER DESCRIPTION AND USES

a. A tool retainer (Figure G-7) is a stock item available in two sizes, 1/4 and 3/8-inch openings. It is available in 18-inch lengths and may be cut to any desired length. The primary use of this item is to hold wrenches, screwdrivers, extensions, etc.

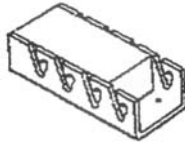


Figure G-7. Tool Retainer

b. The 90-degree support (Figure G-8) is used as a support for punches, chisels, etc. on a container tier attached with self-tapping screws.

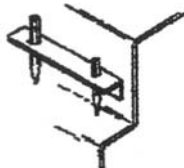


Figure G-8. 90-Degree Support

c. The grip bracket (Figure G-9) is a strip of rubber attached with screws to provide a gripping surface to hold allen wrenches, drill bits, etc. It may be mounted in the horizontal or vertical position.

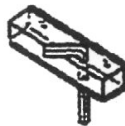


Figure G-9. Grip Bracket

d. Figure G-10 shows a bracket type wire roll mount, which uses a bolt or section of dowel for a roller and may be mounted on a vertical or horizontal surface.

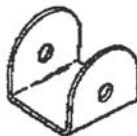


Figure G-10. Bracket Type Wire Roll Mount

e. Vertical wire or solder roll mounts (Figure G-11) are made by cutting a dowel or broom handle to the appropriate length and securing from underneath with a screw.

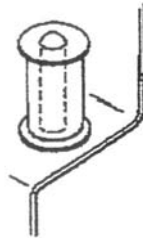


Figure G-11. Vertical Wire Roll Mount

f. The 90-degree UPVC bracket used in combination with finger clips (Figure G-12) may be cut to any desired length. It is used to mount ratchets, screwdrivers, etc. to a flat surface.



Figure G-12. 90-Degree UPVC Bracket

g. Safety goggles are secured in a goggle holder (Figure G-13). Slight variations may be required in dimensions to allow for different goggle styles.



Figure G-13. Safety Goggle Holder

h. Hammers and mallets are stowed on hammer/mallet holder brackets (Figure G-14) in "F" and "G" cabinets.

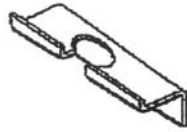


Figure G-14. Hammer/Mallet Holder

i. The fitted holder (Figure G-15) is molded to the shape of the item it is intended to support. It works well on speed handles, combination wrenches, and hacksaws when mounted on vertical panel surfaces.



Figure G-15. Fitted Holder

j. A flexible item bracket (Figure G-16) is used to mount flexible magnetic retrieving tools. This item is molded to shape and sized to fit the tool.



Figure G-16. Flexible Item Bracket

k. A cabinet angle bracket (Figure G-17) is used to hold wrenches and other heavy items on the vertical surfaces of "F" and "G" cabinets. It also is used to hold sheet metal holders in holes drilled in the angle panel.



Figure G-17. Cabinet Angle Bracket

l. The cord holder bracket (Figure G-18) is used to hold cords for electric drills, soldering irons, etc.



Figure G-18. Cord Holder Bracket

m. The multipurpose bracket (Figure G-19) is used to hold magnifying glasses etc., and with modification, landing gear wrenches, oil sample bottles, etc. When mounted vertically it supports drill sets, file sets, sharpening stones, etc.



Figure G-19. Multi-Purpose Bracket

n. The heavy-duty bracket (Figure G-20) provides additional strength to support heavy items such as electric drills, pneumatic drills, soldering-guns, etc.



**Figure G-20.
Heavy Duty Bracket**

o. Clip, Socket Wrench (Figure G-21) are stock item and are available in 1/4, 3/8, 1/2, and 3/4 inch size. The rail comes in 16-3/4 inch length and may be cut to desired shorter lengths, drilled and mounted with screws.

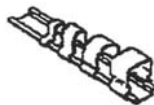


Figure G-21. Clip, Socket Wrench

p. Clip, Spring Tension (Figure G-22) are stock items with NSNs listed in the materials section. They are used in various ways throughout the system.

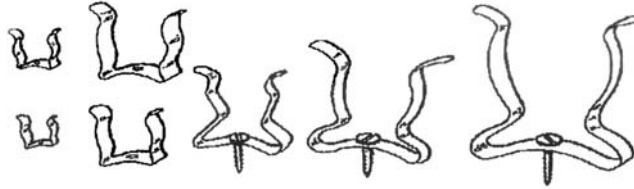


Figure G-22. Clip, Spring Tension

q. The headlamp bracket (Figure G-23) is used to hold the headlamp and battery pack of the assembly.



Figure G-23. Headlamp Bracket

r. Figure G-24 illustrates the use of the rotary electric tool (NSN 5130-01-014-6856) which is used to cut holes of various shapes to retain tools.

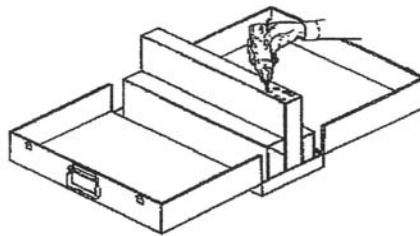


Figure G-24. Rotary Electric Tool

s. Plate, Marking, Blank, Tool (Figure G-25) will be mounted using 1" tape fastener hook and pile secured with industrial adhesive, P/N 847 (04963) or equivalent.

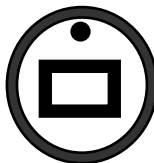


Figure G-25. Plate, Marking, Blank, Tool

t. The Tip holder (Figure G-26) is cut out of rubber sheet (cellular medium) to retain Apex tips, drill bits, etc., secured with industrial adhesive P/N 847 (04963) or equivalent.

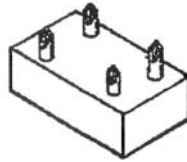


Figure G-26. Tip Holder

ALRE-1 WORK CENTER BOX (CAT)
F-BOX

ITEM	NSN
1.Oiler, Hand, 4 Oz	4930-00-274-5713
2.Oiler, Hand, 4 Oz	4930-00-274-5713
3.Lubricating Gun, Hand	4930-00-253-2478
4.Gage, Thickness 12", 14 Leaves	5210-00-223-9194
5.Gage, Thickness 12", 14 Leaves	5210-00-223-9194
6.Lubricating Gun, Hand	4930-00-253-2478
7. Wrench, Combination, 5/8"	*5120-01-335-1236
8. Wrench, Combination, 11/16"	*5120-01-335-1237
9. Wrench, Combination, 3/4"	*5120-01-335-1258
10. Wrench, Combination, 3/4"	*5120-01-335-1258
11. Wrench, Combination, 3/4"	*5120-01-335-1258
12. Wrench, Combination, 3/4"	*5120-01-335-1258
13. Wrench, Combination, 3/4"	*5120-01-335-1258
14. Wrench, Combination, 3/4"	*5120-01-335-1258
15. Wrench, Combination, 3/4"	*5120-01-335-1258
16. Wrench, Combination, 3/4"	*5120-01-335-1258
17. Wrench, Combination, 13/16"	*5120-01-335-1259
18. Wrench, Combination, 7/8"	*5120-01-335-1260
19. Wrench, Combination, 15/16"	*5120-01-335-1261
20. Wrench, Combination, 1"	*5120-01-335-1262
21. Extension, 1/2" Drive, 4-1/2" - 6"	*5120-01-335-1050
22. Handle, Socket Wrench, Reversible 1/2" Drive	*5120-01-355-1901
23. Extension, 1/2" Drive, 9-1/2" to 10-1/2"	*5120-01-335-1051
24. Handle, Socket Wrench, Hinged, 1/2" Drive, 14"	*5120-01-335-0713
25. Wrench, Open End, Angle Head, 1-5/8"(Roto Retract Only)	*5120-01-355-1711
26. Wrench, Adjustable, Size 8	*5120-01-367-3392
27. Wrench, Adjustable, Size 8	*5120-01-367-3392
28. Hammer, Copper Head, 3 Lb.	5120-00-902-0089
29. Hammer, Ball Peen, 16 Oz	*5120-01-335-1474
30. Hammer, Ball Peen, 16 Oz	*5120-01-335-1474
31. Screwdriver, Flat Tip, 1/4" X 8"	*5120-01-367-3749
32. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
33. Screwdriver, Phillips, #4, 8"	5120-00-764-8098
34. Screwdriver, Reed and Prince, 3/16" X 10"	5120-00-580-2361
35. File, Half, Round, Smooth Cut 8"	*5110-01-335-1587
35A. Handle	*5110-01-349-4826
36. Wire Twister Pliers	5120-00-305-2306
37. Pliers, Duckbill, 6"	5120-00-256-2150
38. Pliers, Diagonal Cut, Cushion Throat, 7-1/2"	5110-00-293-3210

Table G-2. ALRE-1 WORK CENTER BOX (CAT)F-BOX
(1 of 3)

ALRE-1 WORK CENTER BOX (CAT) CONT'D

ITEM	NSN
39. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
40. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
41. Wrench, Combination, 5/16"	*5120-01-335-1230
42. Wrench, Combination, 3/8"	*5120-01-335-1232
43. Wrench, Combination, 3/8"	*5120-01-335-1232
44. Wrench, Combination, 7/16"	*5120-01-335-1233
45. Wrench, Combination, 1/2"	*5120-01-335-1234
46. Wrench, Combination, 1/2"	*5120-01-335-1234
47. Wrench, Combination, 1/2"	*5120-01-335-1234
48. Wrench, Combination, 9/16"	*5120-01-335-1235
49. Key, Socket Head Screw, Hex, 1/4" Long	5120-00-241-3180
50. Key, Socket Head Screw, Hex, 1/4" Long	5120-00-241-3180
51. Key, Socket Head Screw, Hex, 3/8" Long	5120-00-198-5406
52. Key, Socket Head Screw, Hex, 3/8" Long	5120-00-198-5406
53. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
54. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
55. Key, Socket Head Screw, Hex, 5/8" Short	5120-00-224-2510
56. Key, Socket Head Screw, Hex, 5/8" Short	5120-00-224-2510
57. Key, Socket Head Screw, Hex, 3/4" Short	5120-00-222-1489
58. Key, Socket Head Screw, Hex 3/4" Short	5120-00-222-1489
59. Pliers, Slip Joint, 10"	5120-00-223-7398
60. Socket, Impact, 1/2" Drive, 3/8"	*5130-01-348-9208
61. Socket, Impact, 1/2" Drive, 7/16"	*5130-01-348-9209
62. Socket, Impact, 1/2" Drive,	*5130-01-348-9210
63. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
64. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
65. Socket, Impact, 1/2" Drive, 11/16"	*5130-01-348-9212
66. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
67. Socket, Impact, 1/2" Drive, 13/16"	*5130-01-348-9261
68. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262
69. Socket, Impact, 1/2" Drive, 15/16"	*5130-01-348-9263
70. Socket, Impact, 1/2" Drive, 1"	*5130-01-348-9264
71. Socket Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-367-3467
72. Tape, Measuring, 10 Feet	*5210-01-335-1611
73. Tape, Measuring, 10 Feet	*5210-01-335-1611
74. Brass Pin, 6"	NAEC P/N 317534-1
75. Plate, Marking, Blank, Tool	9905-00-473-6336
76. Plate, Marking, Blank, Tool	9905-00-473-6336
77. Plate, Marking, Blank, Tool	9905-00-473-6336
78. Plate, Marking, Blank, Tool	9905-00-473-6336
79. Plate, Marking, Blank, Tool	9905-00-473-6336
80. Handle, Socket Wrench, Hinged, 3/4" Drive	5120-00-221-7959

**Table G-2. ALRE-1 WORK CENTER BOX (CAT)F-BOX
(2 of 3)**

ALRE-1 WORK CENTER BOX (CAT) CONT'D

ITEM	NSN
81. Oiler, Hand, 4 Oz	4930-00-274-5713
82. Oiler, Hand, 4 Oz	4930-00-274-5713
83. Lubricating Gun, Hand	4930-00-253-2478
84. Screwdriver, Flat Tip, 3/8- X 12"	5120-00-278-1276
85. Lubricating Gun, Hand	4930-00-253-2478
87. Dynamometer (In Carrying Case) (2 Each)	

**Table G-2. ALRE-1 WORK CENTER BOX (CAT)F-BOX
(3 of 3)**

ALRE-2 FLASHLIGHT BOX, CATAPULT
C-BOX

ITEM	NSN
1. Flashlight, Traffic Baton	6230-00-926-4331
2. Flashlight, Traffic Baton	6230-00-926-4331
3. Flashlight, Traffic Baton	6230-00-926-4331
4. Flashlight, Traffic Baton	6230-00-926-4331
5. Flashlight, Traffic Baton	6230-00-926-4331
6. Flashlight, Traffic Baton	6230-00-926-4331
7. Flashlight, Traffic Baton With Green Filter	6230-00-926-4331
8. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
9. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
10. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
11. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
12. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
13. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
14. Flashlight, Traffic Baton With Green Filter	6230-00-926-4331

Table G-3. ALRE-2 FLASHLIGHT BOX, CATAPULT C-BOX
(1 of 1)

ALRE-3 SHUTTLE AND GRAB LATCH INSPECTION BOX
C-BOX

ITEM	NSN
1. Wrench, Combination, 1-1/4"	*5120-01-335-1266
2. Retrieving Tool, Magnetic, Telescoping	5120-00-545-4268
3. Grab Latch, Catapult	1720-00-067-9567
4. Plate, Marking, Blank, Tool	9905-00-473-6336
5. Plate, Marking, Blank, Tool	9905-00-473-6336
6. Plate, Marking, Blank, Tool	9905-00-473-6336
7. Plate, Marking, Blank, Tool	9905-00-473-6336
8. Plate, Marking, Blank, Tool	9905-00-473-6336
9. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262
10. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262
11. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262
12. Socket, 1/2" Drive, 1-1/8"	*5120-01-335-0786
13. Socket, 1/2" Drive, 1-1/8"	*5120-01-335-0786
14. Adapter, Socket Wrench, 3/4" Female to 1/2" Male	*5120-01-355-1894
15. Socket Wrench Attachment, 1/2" Drive, 9/16" Hex	*5120-01-367-3466
16. Socket Wrench Attachment, 1/2" Drive, 9/16" Hex	*5120-01-367-3466
17. Socket Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-335-3467
18. Socket Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-335-3467
19. Socket Wrench Attachment, 1/2" Drive, 3/4" Hex	*5120-01-367-3468
20. Screwdriver, Flat Tip, 5/16" X 6 1/2"	*5120-01-367-3745
21. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
22. Handle, Socket Wrench, Hinged, 1/2" Drive	*5120-01-335-0713
22. Wrench, Combination, 9/16"	*5120-01-335-1235
23. Wrench, Combination, 9/16"	*5120-01-335-1235
24. Wrench, Combination, 9/16"	*5120-01-335-1235
25. Wrench, Combination, 3/4"	*5120-01-335-1258
26. Wrench, Combination, 3/4"	*5120-01-335-1258
27. Wrench, Combination, 3/4"	*5120-01-335-1258
28. Wrench, Combination, 1"	*5120-01-335-1262
29. Hammer, Ball Peen, 8 Oz	*5120-01-335-1472
30. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
31. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
32. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
33. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
34. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
35. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
36. Socket, Impact, 1/2" Drive, 11/16"	*5130-01-348-9212
37. Socket, Impact, 1/2" Drive, 11/16"	*5130-01-348-9212
38. Socket, Impact, 1/2" Drive, 11/16"	*5130-01-348-9212
39. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
40. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
41. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
42. Wrench, Shuttle Roller	NAEC P/N 504810-3

Table G-4. ALRE-3 SHUTTLE AND GRAB LATCH INSPECTION BOX
C-BOX (1 of 2)

ALRE-3 SHUTTLE AND GRAB LATCH INSPECTION BOX
C-BOX CONT'D

ITEM	NSN
43. Key, Socket Head Screw, Hex, 3/4" Short	5120-00-222-1489
44. Key, Socket Head Screw, Hex, 3/8" Short	5120-00-198-5309
45. Key, Socket Head Screw, Hex, 5/16" Short	5120-00-240-5274
46. Key, Socket Head Screw, Hex, 1/4" Long	5120-00-241-3180
47. Key, Socket Head Screw, Hex, 7/32" Short	5120-00-242-7411
48. Key, Socket Head Screw, Hex, 3/16" Short	5120-00-240-5300
49. Pliers, Needle Nose 6" With Side Cut	5120-00-247-5177
50. Pliers, Diagonal Cut, Cushion Throat 7-1/2"	5120-00-247-5177
51. Pliers, Multiple Tongue And Groove, 8"	5120-00-278-0351
52. Wire Twister, Pliers	5120-00-305-2306
53. Flashlight	6230-00-299-3035
54. Mirror, Inspection, 2-1/4" Diameter	*5120-01-335-1572
55. Screwdriver, Flat Tip, 3/8" X 12"	5120-00-278-1276
56. Finger, Mechanical, Flexible, 17-1/2"	*5120-01-335-1526
57. Crowbar, 1-1/4" Diameter X 62" Long (4 Each)	5120-00-224-1390

Table G-4. ALRE-3 SHUTTLE AND GRAB LATCH INSPECTION BOX
C-BOX (2 of 2)

ALRE-4 JET BLAST DEFLECTOR (JBD) BOX
B-BOX

ITEM	NSN
1. Wrench, Tap and Reamer, 1/4" to 3/4" Cap	5120-00-289-0539
2. Key, Socket Head Screw, Hex, 5/32" Short	5120-00-198-5392
3. Key, Socket Head Screw, Hex, 5/32" Short	5120-00-198-5392
4. Key, Socket Head Screw, Hex, 3/8" Long	5120-00-198-5406
5. Key, Socket Head Screw, Hex 3/8" Long	5120-00-198-5406
6. Key, Socket Head Screw, Hex, 1/2" Long	5120-00-198-5407
7. Key, Socket Head Screw, Hex, 1/2" Long	5120-00-198-5407
8. Screwdriver, Flat Tip, 3/16" X 3"	*5120-01-367-3734
9. Screwdriver, Flat Tip, 1/4" X 8"	*5120-01-367-3749
10. Wrench, Socket, Spin Type, 5/16"	5120-00-224-2596
11. Wrench, Pliers, Adjustable 8 1/2"	5120-00-277-4244
12. Wrench, Combination, 5/16"	*5120-01-335-1230
13. Wrench, Combination, 1/2"	*5120-01-335-1234
14. Wrench, Combination, 3/4"	*5120-01-335-1258
15. Extension, 1/2" Drive, 4-1/2" - 6"	*5120-01-335-1050
16. Extension, 1/2" Drive, 9-1/2 - 10-1/2"	*5120-01-335-1051
17. Handle, Socket Wrench, Reversible 1/2" Drive	*5120-01-355-1901
18. Handle, Socket Wrench, Reversible 1/2" Drive	*5120-01-355-1901
19. Flashlight	6230-00-299-3035
20. Pliers, Multiple Tongue and Groove, 10"	5120-00-278-0352
21. Socket, Impact, 1/2" Drive, 7/16"	*5130-01-348-9209
22. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
23. Socket, Impact, 1/2" Drive, 1/2"	*5130-01-348-9210
24. Socket, Impact, 1/2" Drive, 1/2"	*5130-01-348-9210
25. Socket, 1/2" Drive, 1/2" Deep	*5120-01-335-0843
26. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
27. Tap, Thread Cutting, 3/4" - 10"	5136-00-729-5682
28. Tap, Thread Cutting, 5/8" - 11"	5136-00-729-5683
29. Plate, Marking, Blank, Tool	9905-00-473-6336
30. Plate, Marking, Blank, Tool	9905-00-473-6336
31. Plate, Marking, Blank, Tool	9905-00-473-6336
32. Plate, Marking, Blank, Tool	9905-00-473-6336
33. Plate, Marking, Blank, Tool	9905-00-473-6336

Table G-5. ALRE-4 JET BLAST DEFLECTOR (JBD) BOX B-BOX
(1 of 1)

ALRE-5 WATERBRAKE BOX
B-BOX

ITEM	NSN
1. Screwdriver, Flat Tip, 3/8" X 12"	5120-00-278-1276
2. Scriber, Machinist's 8-1/2"	5120-00-221-7063
3. Gage, Thickness, 26 Leaves, 3"	5210-00-221-1999
4. Gage, Thickness, 26 Leaves, 3"	5210-00-221-1999
5. Pliers, Needle Nose, 6"	5120-00-268-3579
6. Gage, Thickness, 14 Leaves, 12"	5210-00-223-9194
7. Gage, Thickness, 14 Leaves, 12"	5210-00-223-9194
8. Socket, 1/2" Drive, 11/16"	*5120-61-335-0779
9. Socket, Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-367-3467
10. Wrench, Combination, 1/2"	*5120-01-335-1234
11. Wrench, Combination, 1/2"	*5120-01-335-1234
12. Wrench, Combination, 3/4"	*5120-01-335-1258
13. Wrench, Combination, 3/4"	*5120-01-335-1258
14. Wrench, Combination, 13/16"	*5120-01-335-1259
15. Wrench, Combination, 15/16"	*5120-01-335-1259
16. Wrench, Combination, 15/16"	*5120-01-335-1259
17. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
18. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
19. Key, Socket Head Screw, Hex, 5/32" Short	5120-00-198-5392
20. Key, Socket Head Screw, Hex, 9/16" Short	5120-00-240-5268
21. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
22. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
23. Rule, Steel, Machinist's, 6", No. 4	5210-00-234-5223
24. Wire Twister, Pliers	5120-00-305-2306
25. Wire Twister, Pliers	5120-00-305-2306
26. Socket, 1/2" Drive, 1-1/8", Deep	*5120-01-335-0852
27. Socket, Impact, 1/2" Drive, 1"	*5130-01-348-9264
28. Socket, Impact, 1/2" Drive, 15/16"	*5130-01-348-9263
29. Socket, Impact, 1/2" Drive, 13/16"	*5130-01-348-9261
30. Socket, Impact, 1/2" Drive, 13/16"	*5130-01-348-9261
31. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
32. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
33. Socket, Impact, 1/2" Drive, 1/2"	*5130-01-348-9210
34. Flashlight	6230-00-299-3035
35. Flashlight	6230-00-299-3035
36. Plate, Marking, Blank, Tool	9905-00-473-6336
37. Plate, Marking, Blank, Tool	9905-00-473-6336
38. Plate, Marking, Blank, Tool	9905-00-473-6336
39. Plate, Marking, Blank, Tool	9905-00-473-6336
40. Plate, Marking, Blank, Tool	9905-00-473-6336
41. Screwdriver, Flat Tip, 5/16" X 6"	*5120-01-367-3721
42. Extractor, Cotter Pin	5120-00-222-4284

Table G-6. ALRE-5 WATER BRAKE BOX B-BOX
(1 of 1)

ALRE-6 R-27W BOX
B-BOX

ITEM	NSN
1. Wrench, Combination, 3/4"	*5120-01-335-1258
2. Wrench, Combination, 9/16"	*5120-01-335-1235
3. Wrench, Combination, 15/16"	*5120-01-335-1259
4. Wrench, Combination, 15/16"	*5120-01-335-1259
5. Wrench, Combination, 1 1/8"	*5120-01-335-1264
6. Screwdriver, Flat Tip, 3/8" X 12"	5120-00-278-1276
7. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
8. Wire Twister, Pliers	5120-00-305-2306
9. No-Go Gauge	
10. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
11. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
12. Extension, 1/2" Drive, 4-1/2" - 6"	*5120-01-335-1050
13. Rule, Steel, Machinist's, 6", No. 4	5210-00-234-5223
14. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
15. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
16. Socket Wrench Attachment, 1/2" Drive, 9/16" Hex	*5120-01-367-3466
17. Socket Wrench Attachment, 3/8" Drive, 3/8" Hex	*5120-01-367-3478
18. Socket, Impact, 1/2" Drive, 13/16"	*5130-01-348-9261
19. Socket, Impact, 1/2" Drive, 15/16"	*5130-01-348-9263
20. Socket 3/4" Drive, 1-1/8"	*5120-01-366-8425
21. Handle, Socket Wrench, Hinged, 3/4" Drive, 17"	5120-00-221-7959

Table G-7. ALRE-6 R-27W BOX B-BOX
(1 of 1)

ALRE-7 R-11 BOX
B-BOX

ITEM	NSN
1. Wrench, Combination, 3/4"	*5120-01-335-1258
2. Wrench, Combination, 9/16"	*5120-01-335-1235
3. Wrench, Combination, 15/16"	*5120-01-335-1259
4. Wrench, Combination, 15/16"	*5120-01-335-1259
5. Wrench, Combination, 1 1/8"	*5120-01-335-1264
6. Screwdriver, Flat Tip, 3/8" X 12"	5120-00-278-1276
7. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
8. Wire Twister, Pliers	5120-00-305-2306
9. Gage, Thickness 26 Leaves, 3"	5210-00-221-1999
10. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901

Table G-8. ALRE-7 R-11 BOX B-BOX
(1 of 1)

ALRE-8 WORK CENTER BOX (A/G)
F-BOX

ITEM	NSN
1. Wrench, "T" Adjustable, Anchor	5120-00-590-8828
2. Wrench, "T" Adjustable, Anchor	5120-00-590-8828
3. Oiler, Hand, 4Oz, 3" Spout	4930-00-274-5713
4. Oiler, Hand, 4Oz, 3" Spout	4930-00-274-5713
5. Lubricating Gun, Hand	4930-00-253-2478
6. Oiler, Hand, 4Oz, 3" Spout	4930-00-274-5713
7. Oiler, Hand, 4Oz, 3" Spout	4930-00-274-5713
8. Lubricating Gun, Hand	4930-00-253-2478
9. Tensiometer, 1/4" Cable Capacity	1710-00-594-1376
10. Tensiometer, 1/4" Cable Capacity	1710-00-594-1376
11. Tensiometer, 1/4" Cable Capacity	1710-00-594-1376
12. Wrench, Combination, 5/8"	*5120-01-335-1236
13. Wrench, Combination, 11/16"	*5120-01-335-1237
14. Wrench, Combination, 3/4"	*5120-01-335-1258
15. Wrench, Combination, 3/4"	*5120-01-335-1258
16. Wrench, Combination, 3/4"	*5120-01-335-1258
17. Wrench, Combination, 3/4"	*5120-01-335-1258
18. Wrench, Combination, 3/4"	*5120-01-335-1258
19. Wrench, Combination, 3/4"	*5120-01-335-1258
20. Wrench, Combination, 3/4"	*5120-01-335-1258
21. Wrench, Combination, 3/4"	*5120-01-335-1258
22. Wrench, Combination, 3/4"	*5120-01-335-1258
23. Wrench, Combination, 3/4"	*5120-01-335-1258
24. Wrench, Combination, 3/4"	*5120-01-335-1258
25. Wrench, Combination, 13/16"	*5120-01-335-1259
26. Wrench, Combination, 7/8"	*5120-01-335-1260
27. Wrench, Combination, 15/16"	*5120-01-335-1261
28. Wrench, Combination, 1"	*5120-01-335-1262
29. Wrench, Combination, 1"	*5120-01-335-1262
30. Wrench, Combination, 1"	*5120-01-335-1262
31. Wrench, Combination, 1"	*5120-01-335-1262
32. Wrench, Combination, 1"	*5120-01-335-1262
33. Handle, Socket Wrench, Hinged, 1/2" Drive 9"	*5120-01-335-0713
34. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
35. Extension, 1/2" Drive, 4-1/2" - 6"	*5120-01-335-1050
36. Wrench, Combination, 1-1/8"	*5120-01-335-1264
37. Wrench, Combination, 1-1/8"	*5120-01-335-1264
38. Wrench, Combination, 1-1/8"	*5120-01-335-1264
39. Wrench, Combination, 1-1/8"	*5120-01-335-1264

Table G-9. ALRE-8 WORK CENTER BOX (A/G) F-BOX
(1 of 3)

ALRE-8 WORK CENTER BOX (A/G)
F-BOX CONT'D

ITEM	NSN
40. Extension, 1/2" Drive, 9-1/2" -10-1/2"	*5120-01-335-1051
41. Screwdriver, Flat Tip, 3/8" x 10"	*5120-01-335-2484
42. Screwdriver, Flat Tip, 3/8" x 10"	*5120-01-335-2484
43. Screwdriver, Flat Tip, 3/8" x 10"	*5120-01-335-2484
44. Screwdriver, Flat Tip, 3/8" x 10"	*5120-01-335-2484
45. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
46. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
47. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
48. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
49. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
50. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
51. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
52. Rule, Steel, Machinist's, 12", No. 4	5210-00-234-5224
53. Lubricating Gun, Hand	4930-00-253-2478
54. Wrench, Combination, 5/16"	*5120-01-335-1230
55. Wrench, Combination, 3/8"	*5120-01-335-1232
56. Wrench, Combination, 3/8"	*5120-01-335-1232
57. Wrench, Combination, 3/8"	*5120-01-335-1232
58. Wrench, Combination, 3/8"	*5120-01-335-1232
59. Wrench, Combination, 3/8"	*5120-01-335-1232
60. Wrench, Combination, 3/8"	*5120-01-335-1232
61. Wrench, Combination, 3/8"	*5120-01-335-1232
62. Wrench, Combination, 3/8"	*5120-01-335-1232
63. Wrench, Combination, 7/16"	*5120-01-335-1233
64. Wrench, Combination, 1/2"	*5120-01-335-1234
65. Wrench, Combination, 9/16"	*5120-01-335-1235
66. Wrench, Combination, 7/16"	*5120-01-335-1233
67. Wrench, Combination, 1/2"	*5120-01-335-1234
68. Wrench, Combination, 5/8"	*5120-01-335-1236
69. Wrench, Combination, 11/16"	*5120-01-335-1237
70. Socket, Impact, 1/2" Drive, 3/8"	*5130-01-348-9208
71. Socket, Impact, 1/2" Drive, 7/16"	*5130-01-348-9209
72. Socket, Impact, 1/2" Drive, 1/2"	*5130-01-348-9210
73. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
74. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
75. Socket, Impact, 1/2" Drive, 11/16"	*5130-01-348-9212
76. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
77. Socket, Impact, 1/2" Drive, 13/16"	*5130-01-348-9261
78. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262

Table G-9. ALRE-8 WORK CENTER BOX (A/G) F-BOX
(2 of 3)

ALRE-8 WORK CENTER BOX (A/G)
F-BOX CONT'D

ITEM	NSN
79. Socket, Impact, 1/2" Drive, 15/16"	*5130-01-348-9263
80. Socket, Impact, 1/2" Drive, 1"	*5130-01-348-9264
81. Fitting, Lubrication, Flush Style	4730-00-250-7902
82. Fitting, Lubrication, Flush Style	4730-00-250-7902
83. Fitting, Lubrication, Flush Style	4730-00-250-7902
84. Fitting, Lubrication, Flush Style	4730-00-250-7902
85. Coupling, Grease Gun, Nozzle	4930-00-722-4094
86. Coupling, Grease Gun, Nozzle	4930-00-722-4094
87. Coupling, Grease Gun, Nozzle	4930-00-722-4094
88. Coupling, Grease Gun, Nozzle	4930-00-722-4094
89. Wrench, "T" Adjustable, Anchor	5120-00-590-8828
90. Wrench, "T" Adjustable, Anchor	5120-00-590-8828
91. Oiler, Hand, 4 Oz, 3" Spout	4930-00-274-5713
92. Oiler, Hand, 4 Oz, 3" Spout	4930-00-274-5713
93. Lubricating Gun, Hand	4930-00-253-2478
94. Oiler, Hand, 4 Oz, 3" Spout	4930-00-274-5713
95. Oiler, Hand, 4 Oz, 3" Spout	4930-00-274-5713
96. Lubricating Gun, Hand	4930-00-253-2478
97. Plate, Marking, Blank, Tool	9905-00-473-6336
98. Plate, Marking, Blank, Tool	9905-00-473-6336
99. Plate, Marking, Blank, Tool	9905-00-473-6336
100. Plate, Marking, Blank, Tool	9905-00-473-6336
101. Plate, Marking, Blank, Tool	9905-00-473-6336

Table G-9. ALRE-8 WORK CENTER BOX (A/G) F-BOX
(3 of 3)

ALRE-9 FLASHLIGHT BOX (A/G)
C-BOX

ITEM	NSN
1. Flashlight, Traffic Baton	6230-00-926-4331
2. Flashlight, Traffic Baton	6230-00-926-4331
3. Flashlight, Traffic Baton	6230-00-926-4331
4. Flashlight, Traffic Baton	6230-00-926-4331
5. Flashlight, Traffic Baton	6230-00-926-4331
6. Flashlight, Traffic Baton	6230-00-926-4331
7. Flashlight, Traffic Baton With Green Filter	6230-00-926-4331
8. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
9. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
10. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
11. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
12. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
13. Flashlight, Traffic Baton With Red Filter	6230-00-926-4331
14. Flashlight, Traffic Baton With Green Filter	6230-00-926-4331

Table G-10. ALRE-9 FLASHLIGHT BOX (A/G) C-BOX
(1 of 1)

ALRE-10 TOPSIDE SHEAVE BOX
C-BOX

ITEM	NSN
1. Screwdriver, Flat Tip, 3/8" X 8" Cushion Grip	* 5120-01-335-2497
2. Holder, Inserted Hammer Face, 3-1/2 lbs., 3" Diameter With Face, Hammer, Inserted, Hard, 3" Diameter (2 Each)	5120-00-903-8552 5120-00-555-2086
3. Handle, Socket Wrench, Reversible 3/8" Drive	*5120-01-355-1867
4. Extension, 1/2" Drive, 10"	*5120-01-335-1051
5. Wrench, Tap and Reamer, 1/4" - 3/4" Cap.	5120-00-289-0539
6. File, Hand, Flat, Smooth Cut, 12"	*5110-01-335-1583
7. Handle	*5110-01-349-4828
8. Scraper, Ship, Paint, 1-3/4" X 15"	5110-00-240-3094
9. Plate, Marking, Blank, Tool	9905-00-473-6336
10. Plate, Marking, Blank, Tool	9905-00-473-6336
11. Plate, Marking, Blank, Tool	9905-00-473-6336
12. Plate, Marking, Blank, Tool	9905-00-473-6336
13. Plate, Marking, Blank, Tool	9905-00-473-6336
14. Tap, Thread Cutting, Bottoming, 1/2" - 13	5136-00-729-5688
15. Tap, Thread Cutting, Bottoming, 1/2" - 13	5136-00-729-5688
16. Tap, Thread Cutting, Bottoming, 7/8" - 14	UNK
17. Scraper, Ship, Paint, 1-3/4" X 15	5110-00-240-3094
18. Flashlight	6230-00-270-5688
19. Flashlight	6230-00-270-5688
20. Handle, Socket Wrench, Reversible, 3/4" Drive, 17"	5120-00-249-1076
21. Socket Wrench Attachment, 3/4" Drive 3/4" Hex	5120-01-024-0168
22. Adapter, Socket Wrench, 3/4" Female to 1/2" Male	*5120-01-355-1894
23. Socket Wrench Attachment, 1/2" Drive, 1/2" Hex	*5120-01-367-3465
24. Adapter, Socket Wrench, 1/2" Female to 3/8" Male, Impact	*5130-01-366-8222
25. Socket Wrench Attachment, 3/8" Drive, 3/8" Hex	*5120-01-367-3478
26. Wrench, Combination, 9/16"	*5120-01-335-1235
27. Wrench, Combination, 9/16"	*5120-01-335-1235

Table G-11. ALRE-10 TOPSIDE SHEAVE BOX C-BOX
(1 of 1)

ALRE-11 FAIRLEAD BOX
B-BOX

ITEM	NSN
1. Scraper, Ship, Paint, 1-3/4" X 15"	5110-00-240-3094
2. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
3. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
4. Plate, Marking, Blank, Tool	9905-00-473-6336
5. Plate, Marking, Blank, Tool	9905-00-473-6336
6. Plate, Marking, Blank, Tool	9905-00-473-6336
7. Plate, Marking, Blank, Tool	9905-00-473-6336
8. Plate, Marking, Blank, Tool	9905-00-473-6336
9. Socket, Impact, 1/2" Drive, 7/8"	*5130-01-348-9262
10. Socket, Impact, 1/2" Drive, 3/4"	*5130-01-348-9260
11. Adapter, Socket Wrench, 3/4" Female to 1/2", Male	*5120-01-355-1894
12. Socket, Wrench Attachment, 1/2" Drive, 3/4" Hex	*5120-01-367-3468
13. Socket, Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-367-3467
14. Socket, Wrench Attachment, 1/2" Drive, 9/16" Hex	*5120-01-367-3466
15. Socket, Impact, 1/2" Drive, 5/8"	*5130-01-348-9211
16. Socket, Impact, 1/2" Drive, 9/16"	*5130-01-362-0020
17. Adapter, Socket Wrench, 1/2" Female to 3/8" Male, Impact	5130-01-056-7716
18. Socket Wrench Attachment, 3/8" Drive, 3/8" Hex	*5120-01-367-3478
19. Socket Wrench Attachment, 3/8" Drive, 3/8" Hex	*5120-01-367-3478
20. Socket Wrench Attachment, 3/8" Drive, 5/16" Hex	*5120-01-367-3477
21. Bar, Cheater	LOCAL MFG
22. Wrench, Combination 3/4"	*5120-01-335-1258
23. Wrench, Combination 3/4"	*5120-01-335-1258
24. Wrench, Combination 11/16"	*5120-01-335-1237
25. Wrench, Combination 11/16"	*5120-01-335-1237
26. Wrench, Combination 9/16"	*5120-01-335-1235
27. Wrench, Combination 9/16"	*5120-01-335-1235
28. Hammer, Ball Peen, 16 Oz	*5120-01-335-1474
29. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
30. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
31. Wire, Non-Electrical, 0.032	9505-00-293-4208
32. Wire Twister, Pliers	5120-00-305-2306
33. Handle, Socket Wrench, Hinged, 1/2" Drive, 14"	*5120-01-335-0713
34. Mallet, Rubber, 24 Oz	5120-00-293-3399

Table G-12. ALRE-11 FAIRLEAD BOX B-BOX
(1 of 1)

ALRE-12 CONSTANT RUNOUT (CRO) BOX
B-BOX

1. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
2. Plate, Marking, Blank, Tool	9905-00-473-6336
3. Plate, Marking, Blank, Tool	9905-00-473-6336
4. Plate, Marking, Blank, Tool	9905-00-473-6336
5. Plate, Marking, Blank, Tool	9905-00-473-6336
6. Plate, Marking, Blank, Tool	9905-00-473-6336
7. Socket Wrench Attachment, 3/8" Drive, 3/16" Hex	*5120-01-367-3457
8. Socket Wrench Attachment, 3/8" Drive, 3/8" Hex	*5120-01-367-3478
9. Socket Wrench Attachment, 1/2" Drive, 5/16" Hex	*5120-01-367-3462
10. Socket Wrench Attachment, 1/2" Drive, 5/8" Hex	*5120-01-367-3467
11. Socket Wrench Attachment, 3/4" Drive, 3/4" Hex	5120-01-024-0168
12. Socket, 1/2" Drive, 9/16"	*5120-01-335-0796
13. Socket, 3/4" Drive, 1-1/16"	*5120-01-024-2453
14. Socket, 3/4" Drive, 1-1/8"	*5120-00-239-0021
15. Adapter, Socket Wrench, 1/2" Female to 3/8" Male	*5120-01-366-8220
16. Adapter, Socket Wrench, 3/4" Female to 1/2" Male	*5120-01-355-1894
17. Crowfoot Attachment, 1/2" Drive, 1-1/8", Open End Box	*5120-01-335-1120
18. Brass Pin, 1-1/4" Diameter, 9" Long	NAEC P/N 317534-1
19. Pliers Set, Retaining Ring, No. 1-9	5120-00-789-0492
20. Pliers Set, Retaining Ring, No. 1-9	5120-00-789-0492
21. Wrench, Combination, 9/16"	*5120-01-335-1235
22. Wrench, Combination, 9/16"	*5120-01-335-1235
23. Handle, Socket Wrench, Reversible 1/2" Drive	*5120-01-355-1901
24. Extractor, Stuffing Box and Pump Packing, Size 2	5120-00-223-9557
25. Wire Twister, Pliers	5120-00-305-2306
26. Hammer, Brass, 32 Oz	5120-00-187-1034
27. Handle, Socket Wrench, Reversible, 3/4" Drive	5120-00-249-1076

Table G-13. ALRE-12 CONSTANT RUNOUT (CRO) BOX B-BOX
(1 of 1)

ALRE-13 SOCKET POURING BOX
A-BOX

1. Pliers, Diagonal Cut, 7-1/2"	5110-00-222-2708
2. Hammer, Ball Peen, 16 Oz	*5120-01-335-1474
3. Brush, Plater's, Steel Wire	7920-00-267-1215
4. Mallet, Rubber, 24 Oz	5120-00-293-3399
5. Wrench, Pliers, 8-1/2"	5120-00-277-4244
6. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
7. Screwdriver, Flat Tip, 3/8" X 10"	*5120-01-335-2484
8. File, Hand, Flat, Second Cut, 12"	5110-00-203-4855
9. Wire Twister, Pliers	5120-00-305-2306
10. Pliers, Slip Joint, 8"	5120-00-223-7397
11. Tape, Measuring, 6 Feet	*5210-01-335-1615
12. Tape, Measuring, 10 Feet	*5210-01-335-1611
13. Knife, Pocket, Marlinespike	5110-00-530-1557
14. Plate, Marking, Blank, Tool	9905-00-473-6336
15. Plate, Marking, Blank, Tool	9905-00-473-6336
16. Plate, Marking, Blank, Tool	9905-00-473-6336
17. Plate, Marking, Blank, Tool	9905-00-473-6336
18. Plate, Marking, Blank, Tool	9905-00-473-6336
19. Saw, Hand, Metal Cutting	5110-00-221-0235

Table 14. ALRE-13 SOCKET POURING BOX A-BOX
(1 of 1)

ALRE-14 WORK CENTER BOX, VLA
F-BOX

Nomenclature	NSN
1. Flashlight	6230-00-270-5418
2. Alignment Tool Set, Electronics	5180-00-650-7823
3. Wrench, Combination, 3/16"	*5120-01-264-6122
4. Wrench, Combination, 1/4"	*5120-00-142-5357
5. Wrench, Combination, 9/32"	*5120-01-173-7057
6. Wrench, Combination, 1"	*5120-01-335-1262
7. Handle, Socket Wrench, Hinged, 3/8" Drive	*5120-01-355-1864
8. Handle, Socket Wrench, Reversible, 3/8" Drive	*5120-01-355-1867
9. Handle, Socket Wrench, Hinged, 1/2" Drive	*5120-01-355-0713
10. Handle, Socket Wrench, Reversible, 1/2" Drive	*5120-01-355-1901
11. Mirror, Inspection, 1-1/4" Diameter	*5120-01-335-1568
12. Retrieving Tool, Magnetic	*5120-01-335-1375
13. Hammer, Ball Peen, 16-Oz	*5120-01-335-1474
14. Screwdriver, Flat Tip, 5/16 X 1-3/4"	5120-00-278-1273
15. Mirror, Inspection 11"	5120-00-278-9926
16. Screwdriver, Flat Tip, 1/4" X 4"	*5120-01-367-3720
17. Screw Starter, Hand, Flat Tip, 7-1/4" X 1/4"	5120-00-278-0326
18. Screwdriver, Flat Tip, 3/8" X 8" Non-Sparking	5120-00-287-2502
19. Screwdriver, Flat Tip, 3/16" X 5"	5120-00-278-1270
20. Screwdriver, Flat Tip, 5/16" X 6"	*5120-01-367-3721
21. Screwdriver, Flat Tip, 3/8" X 8" Insulated Blade	*5120-01-367-3722
22. Screwdriver, Phillips #2, 7"	5120-00-596-0861
23. Screwdriver, Flat Tip, 5/32" X 10"	5120-00-293-3178
24. Soldering Aid, Reamer and Forked Tip	3439-00-629-2697
25. Soldering Aid, Brush and Forked Tip	3439-00-611-7136
26. Hammer, Hand Scaling, 1 LB	5120-00-224-4111
27. Panel Card Puller	5998-01-302-3384
28. Pliers, Slip Joint, 6"	5120-00-223-7397
29. Pliers, Diagonal Cut, Cushion Throat, 7-1/2"	5110-00-293-3210
30. Pliers, Needle Nose, 6-1/2" With Side Cut	5120-00-247-5177
31. Wire Twister, Pliers	5120-00-305-2306
32. Pliers, Multiple Tongue and-Groove, 10"	5120-00-278-0352
33. Pliers, Curved, Needle Nose, 6"	5120-00-239-8250
34. Pliers, Electrical Connector	5120-00-624-8065
35. Crimping Tool, Terminal, Hand	5120-00-278-2423
36. Puller Fuse #2	5120-00-224-9456
37. Handle, Socket Wrench, Hinged, 1/4" Drive	*5120-01-335-0759
38. Handle, Socket Wrench, Reversible, 1/4" Drive	*5120-01-335-0766

Table 15. ALRE-14 WORK CENTER BOX, VLA F-BOX
(1 of 3)

ALRE-14 WORK CENTER BOX, VLA
F-BOX CONT'D

Nomenclature	NSN
39. Extension, 1/4" Drive, 5" - 6-1/2"	*5120-01-335-1072
40. Extension, 1/4" Drive, 2" - 3-1/2"	*5120-01-335-1070
41A. Tweezers, Craftsman, Fine Tip, 4-1/2"	5120-00-247-0867
41B. Tweezers, Craftsman, Clock, 6-1/2"	5120-00-233-6985
42. Key, Pocket Read Screw, Hex, 9/64" Short	5120-00-889-2163
43. Key, Socket Read Screw, Hex, 5/32" Short	5120-00-198-5392
44. Key, Socket Head Screw, Hex, 3/16" Short	5120-00-240-5300
45. Key, Socket Head Screw, Hex, 7/32" Short	5120-00-242-7411
46. Key, Socket Head Screw, Hex, 1/4" Short	5120-00-224-4659
47. Key, Socket Read Screw, Hex, 5/16" Short	5120-00-240-5274
48. Key, Socket Read Screw, Hex, 3/8" Short	5120-00-198-5390
49. Key, Socket Head Screw, Hex, 7/16" Short	5120-00-240-5277
50. Key, Socket Head Screw, Hex, 1/2" Short	5120-00-198-5391
51. Key, Socket Read Screw, Hex, 9/16" Short	5120-00-240-5268
52. Key, Socket Head Screw, Hex, 5/8" Short	5120-00-224-2510
53. Key, Socket Read Screw, Hex, 3/4"	5120-00-222-1489
54. Socket, 1/4" Drive, 3/16"	*5120-01-335-0933
55. Socket, 1/4" Drive, 7/32"	*5120-01-335-0934
56. Socket, 1/4" Drive, 1/4"	*5120-01-335-0935
57. Socket, 1/4" Drive, 9/32"	*5120-01-335-0936
58. Socket, 1/4" Drive, 5/16"	*5120-01-335-0937
59. Socket, 1/4" Drive, 11/32"	*5120-01-335-0938
60. Socket, 1/4" Drive, 3/8"	*5120-01-335-0939
61. Socket, 1/4" Drive, 7/16"	*5120-01-335-0940
62. Socket, 1/4" Drive, 1/2"	*5120-01-335-0941
63. Socket, 1/4" Drive, 9/16"	*5120-01-335-0942
64. Adapter, Socket Wrench, 1/4" Female to 3/8" Male	*5120-01-335-0695
65. File Set, Needle	5110-00-204-2685
66. Socket, 3/8" Drive, 3/8"	*5120-01-335-0916
67. Socket, 3/8" Drive, 3/8"	*5120-01-335-0916
68. Socket, 3/8" Drive, 7/16"	*5120-01-335-0917
69. Socket, 3/8" Drive, 1/2"	*5120-01-335-0918
70. Adapter, Socket Wrench, 3/8" Female to 1/4" Male	*5120-01-335-0700
71. Socket, 1/2" Drive, 3/8"	*5120-01-335-0774
72. Socket, 1/2" Drive, 7/16"	*5120-01-335-0775
73. Socket, 1/2" Drive, 1/2"	*5120-01-335-0776
74. Socket, 1/2" Drive, 9/16"	*5120-01-335-0777
75. Adapter, Socket Wrench, 1/2" Female to 3/8" Male, Impact	*5130-01-366-8222

Table 15. ALRE-14 WORK CENTER BOX, VLA F-BOX
(2 of 3)

ALRE-14 WORK CENTER BOX, VLA
F-BOX CONT'D

Nomenclature	NSN
76. Adapter, Socket Wrench, 1/2" Female to 3/8" Male, Impact	*5130-01-366-8222
77. Screwdriver, Jewelers, 0.0251"	5120-00-180-0705
78. Screwdriver, Jewelers, 0.040"	5120-00-180-0706
79. Screwdriver, Jewelers, 0.055"	5120-00-180-0727
80. Screwdriver, Jewelers, 0.070"	5120-00-180-0728
81. Screwdriver, Jewelers, 0.080"	5120-00-180-0729
82. Screwdriver, Jewelers, 0.100"	5120-00-180-0730
83. Key, Socket Head Screw, Hex, .028" Short	5120-00-555-2639
84. Key, Socket Head Screw, Hex, .035" Short	5120-00-198-5400
85. Key, Socket Head Screw, Hex, .050" Short	5120-00-198-5401
86. Key, Socket Head Screw, Hex, 1/16" Short	5120-00-198-5398
87. Key, Socket Head Screw, Hex, 5/64" Short	5120-00-224-2504
88. Key, Socket Head Screw, Hex, 3/32" Short	5120-00-242-7410
89. Key, Socket Head Screw, Hex, 7/64" Short	5120-00-889-2162
90. Key, Socket Read Screw, Hex, 1/8" Short	5120-00-240-5292
91. Screwdriver, Offset, Phillips #1 and #2	*5120-01-367-3758
92. Screwdriver, Offset, Flat Tip, 1/4" X 4-1/2"	*5120-01-367-3763
93. Panel Card Puller	5999-01-060-5096
94. Plate, Marking, Blank, Tool	9905-00-473-6336
95. Plate, Marking, Blank, Tool	9905-00-473-6336
96. Plate, Marking, Blank, Tool	9905-00-473-6336
97. Plate, Marking, Blank, Tool	9905-00-473-6336
98. Plate, Marking, Blank, Tool	9905-00-473-6336
99. Lubricating Gun, Hand, Pistol Grip	4930-00-965-0288

SHOP EQUIPMENT

Nomenclature	NSN
1. Wrench, Combination, 1-7/8"	*5120-01-335-1241

Table 15. ALRE-14 WORK CENTER BOX, VLA F-BOX
(3 of 3)

SECTION VI
SPECIAL TOOL LISTINGS

6-1 INTRODUCTION.

This section is a listing of special tools in use by the ALRE tool control program. Procure through the normal supply system, except items for which no NSN has been established. These items must be obtained from NAEC, open purchased through a local outlet, or locally manufactured.

SPECIAL TOOLS AND MATERIALS

CATAPULTS

Nomenclature	Part No.	NSN
Wrench, Chain Type	423170-1	5120-00-018-3203
Tool, Spring, Tension, Seal Strip	416562-2	1720-00-030-9492
Pump Unit, 20,000 PSI, Air Operated	403309-1	1720-00-045-9639
Wrench, Hex Box, 3 1/32"	411939-1	5120-00-058-6297
Cart, Cylinder Diameter	TS15404-1	1720-00-070-9885
Multiplier, Torque Wrench	406761-1	1720-00-077-2772
Wrench, Water Brake, Choke Ring	512717-1	5120-00-091-0756
Wrench, Launch Valve, Piston Rod	514239-1	5120-00-150-7330
Wrench, Launch Valve, Piston Rod	514239-2	5120-00-168-4986
Wrench, Launch Valve, Piston Rod	514239-3	5120-00-168-4987
Wrench Assembly, LLLV Hydraulic	422091-1	5120-00-288-0198
Dynamometer	311942-2	6635-00-323-1947
Ejector, Gland	87168-2	5120-00-335-6221
Wrench, Piston Bolt, Offset	417057-1	5365-00-349-8194
Alignment Tool Assembly LLLV	511088-1	5120-00-460-2923
Wrench, Spanner Launch Valve	418200-1	5120-00-479-3908
Ram, Hydraulic, 6 Stroke, 10 Ton	65442	4320-00-516-3902
Socket, Special	406761-2	5130-00-573-1514
Wrench, Octagon	403080-1	5120-00-596-2989
Jack Assembly, Hydraulic	65403	1710-00-606-0408
Gage Set, Sheave Groove	412152-1	5220-00-780-6557
Drill Press, Magnetic	408379-1	3413-00-884-8653
Grab, Disengaging Tool	318452-1	1720-00-897-3415
Tool Assembly, LV/EV Piston, Removal	415031-1	1720-00-912-2378
Compressor, Piston Ring	509703-1	1720-00-912-2482
Compressor, Piston Ring	520327-1	5120-01-320-1728

Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
(1 of 9)

SPECIAL TOOLS AND MATERIALS

CATAPULTS

Nomenclature	Part No.	NSN
Stop, L/B VLV Piston Removal	323149-1	1720-00-916-6451
Gage, Water Brake, Choke Ring	316314-7	5520-00-921-8450
Tool Impact Torque, Controlled	510663-1	5130-00-985-3601
Lifting Assembly, Sealing Strip	608288-1	1720-00-994-6267
Lifting Assembly, Sealing Strip	608288-14	5120-01-334-3126
Insertion Tool, CSV Spindle	517843-1	5120-01-017-5238
Spreader Cover	619531-1	1720-01-050-6359
Extension Torque Wrench	503640-21	5120-01-057-7777
Jack Hydraulic, Wedge Type	65445	4320-01-200-3218
Cart, Cylinder Inspection	622310-1	3920-01-201-5806
Wrench, Spanner	520376	5120-01-202-2190
Wrench, Retract Engine Bngr Nut	418075-1	5120-01-210-9544
Wrench, Retract Eng. Bngr Nut	418076-1	5120-01-210-9545
Depressor, Seg Cylinder, Cover Seal	511860-4	5120-01-211-2672
Wrench, Spanner	87124-11	5120-01-214-2920
Wrench, Spanner	07131-8	
Wrench, Spanner	411935-1	5120-01-317-3217
Table, Lift	424869-1	1720-01-287-2724
Gage, Piston Position	514416-2	
Tool Kit, Helical Coil Inserts	515152-1	5180-01-324-2513
Compression Packing Tool, Launch VLV	521507-1	5120-01-316-7526
Drill Jig & Sight Bar Assembly	614016-1	5120-01-322-2344
Wrench, Spanner Launch VLV	624047-1	5120-01-251-7126
Wrench, Spanner	87124-1	5120-01-313-1952
Wrench, Spanner	87124-2	
Wrench, Spanner	87124-4	5120-01-251-8283
Gage, Cylinder Diameter	TS15264-1	
Wrench, Adjustable, 2 3/4" - 4 3/4"	A-A-2345	5120-00-277-6470
Wrench, Adjustable, 1 3/8" - 2 7/8"	A-A-2345	5120-00-277-6471
Dolly & Towing Tool Cylinder Insp	NAEC	
Dolly & Towing Tool Cylinder Insp	NAEC	
Anchor Install, Grab Cable Test	403016-1	1720-00-775-9248
Lifting Sling Wire Rope	NO P/N	
Ring Tool, External Retainer	NO P/N	
Swivel, Jaw and Link	414988-1	
Lifting Eye Shackle	NAS1043-	4030-00-185-0476

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
(2 of 9)**

SPECIAL TOOLS AND MATERIALS

CATAPULTS

Nomenclature	Part No.	NSN
Lifting Eye Shackle	MS51937-9	5306-01-227-3988
Jack, Hydraulic Wedge Type	NO P/N	
Jack Assembly, Hydraulic	NO P/N	
Hose Assembly, 10' Button Head	425374-1	4720-01-205-0194
Grease Gun	MIL-G-	4930-00-253-2478
Packing Ring Tool, Plug Shaft Steam	426716-1	5120-01-316-7527
Maintenance Tool, Piston Assembly	624691-1	1720-01-276-6049
Maintenance Tool, Piston Assembly	624691-12	1720-01-271-1144
Spear Support	624624-1	1720-01-276-6055
Spear Support	624624-8	1720-01-309-1867
Air Impact Wrench	AT750B	5130-01-324-2514
Socket Set	522798-1	5130-01-358-3191
Union Nut Wrench	A-A-2345	5120-00-277-6471
Union Nut Wrench	A-A-2345	5120-00-277-6470
Union Nut Wrenches 1/2", 1", 1 1/2", 2"	A-A-2345	TYCOM PROVIDED

MK 2 NOSE GEAR LAUNCH

Nomenclature	Part No.	NSN
Actuating Tool, Buffer Hook Manual	512790-1	5120-00-481-4196
Jacking Tool Assembly Track	417660-1	1720-00-481-4188
Tensioner Calibration Assembly	615232-1	
Tool Kit	512798-1	
Blocking Bar	520021-1	

REX-ROTH PUMPS

Nomenclature	Part No.	NSN
Key Set, Socket Head	AWM140CK	5120-01-046-5079
Wrench Set, Socket, Metric	220AMB	5120-00-935-7315

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
(3 of 9)**

SPECIAL TOOLS AND MATERIALS

ARRESTING GEAR

Nomenclature	Part No.	NSN
Support Fixture (F.S. & X-Head)	613654-1	1710-00-020-1126
Jacking Fixture (F.S. & X-Head)	510695-1	4940-00-020-1213
Torque Wrench Adapter Assembly	420862-1	1710-00-030-9474
Hydraulic Pump (Engine Hydro Pump)	403309-3	1720-00-045-9639
Wire Rope, Wire Gage	421031-1	5210-00-111-1358
Zinc Ingot	323822-2	9650-00-126-9221
Bent Tube	323843-1	4710-00-152-0881
File Flat Lead-Float, 12"x13/16"x 9/32"	A-A-2315	5110-00-156-0131
Steel Container, 14 Qt.	A-A-1273	7240-00-160-0455
Dynamometer (Cable Test)	501838-10	6635-00-169-1425
Socket Tester Assembly	617253-2	4940-00-171-3972
Oakum	426637-1	5330-00-171-6561
Bimetallic Thermometer 50° to 300° F	G207	6685-00-174-6239
Plaster Paris Bandage	30-1014-12	6510-00-201-2001
Test Plug (CRO Valve)	411122-1	5305-00-207-4417
Seizing Wire, Steel, 3/32" Diameter	RR-W-410	4010-00-222-5346
Chalk, Marking, White	A-A-318	7510-00-223-6706
Electric Hot Plate	W-H-636	7310-00-224-9125
Marlin Spike (16 Inch Large)	MIL-M-15926	5120-00-224-9440
Pliers, Lineman, 8"	GGG-P-471	5120-00-239-8251
Knife, Pocket	GGG-K-484	5110-00-240-5943
Adapter Dynamometer (Accumulator Piston)	403399-2	3040-00-241-0046
Clip, Wire Rope	A92392-14	4030-00-243-4440
Goggles, Safety, Chippers	GGG-G-513	4240-00-269-7912
Hacksaw Blade, 10", 24 TPI, (10 EA)	GGG-B-451	5110-00-277-4588
Hacksaw Blade, 10", 32 TPI, (10 EA)	GGG-B-451	5110-00-277-4589
Tape, Measuring Steel, 6 Ft	C926	5210-00-287-3335
Pliers, Retaining Ring, 2-2-1	315448-6	5120-00-288-9717
Nipple (Hydraulic Pump)	A313318-1	4730-00-289-9426
Hacksaw Frame, Hand, Adj 10" To 12"	A-A-453	5110-00-289-9657
Wire Brush, Scratch, Curved Handle	H-B-178	7920-00-291-5815
Pliers, Retaining Ring, 2-2-4	315448-8	5120-00-293-0047
Machinist Vice, 4" Jaw Width, 6"	GGG-V-410	5120-00-293-1439
Funnel	90594-1	1710-00-316-0163
Ram Fixture	02-5327-1	4920-00-322-6657

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
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SPECIAL TOOLS AND MATERIALS

ARRESTING GEAR

Nomenclature	Part No.	NSN
Die & Tap Set	501271-1	5110-00-323-2271
Copper Wire, .045 Diameter	MS20995NC4	9525-00-409-1866
Fluxing Mixture	419442-1	3439-00-469-3398
Wrench	317858-1	5120-00-475-7925
Wrench, CRO Valve Seat	403227-1	5120-00-506-9479
Glass Remover, Remote Indicator	315967-1	1710-00-508-3065
Portable Pyrometer	92611-10	6685-00-514-3607
Barricade, Air Motor	404749-1	5130-00-554-8787
Abrasive Discs	606231-1	1710-00-566-1726
Spanner Wrench	404143-1	5120-00-566-4591
Ladle	316033-1	5120-00-570-2715
Take Up Nut	E87885-107	5310-00-579-0869
Wrench, CRO Valve	315414-1	5120-00-590-8827
Wrench, CRO Valve	315426-1	5120-00-590-8828
Wrench, Quick Detach Coupling	316431-1	5120-00-592-8931
Wrench, Extension	316321-1	5120-00-593-3830
Cable Tension Indicator	315454-2	1710-00-594-1376
Tap, Bottoming	314267-2	5136-00-596-1570
Die, Rethreading	314267-1	5136-00-596-6164
Jack Block Assembly	316183-1	1710-00-604-8607
Ram & Pump Assembly (Cylinder Jacking)	404808-1	1710-00-606-0408
Positioning Fixture	316563-1	1710-00-608-6515
Driving Fixture	316566-1	1710-00-608-6518
Test Plug	315643-1	1710-00-609-4455
Coupling (Hydraulic Pump)	A314773-2	4730-00-618-7938
Elbow (Hydraulic Pump)	A314778-2	4730-00-618-7939
Cutter Assembly	91717-19	5130-00-654-9174
Adhesive Cloth, Tape 3'	MIL-T-4053	7510-00-660-0004
Insertion Fixture (Accumulator Position)	403787-1	1710-00-694-2678
Brooming Tool	317136-1	1710-00-716-3584
Nozzle 1/8 NPT (CROV)	314812-2	4930-00-722-4094
Wrench, CROV Seat	515115-1	5120-00-769-0684
Wrench, CROV Seat	515209-1	5120-00-769-0687
Container, Stainless Steel	RR-P-53	7240-00-773-0975
Lifting Pad	407768-1	1710-00-773-6681

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
(5 of 9)**

SPECIAL TOOLS AND MATERIALS

ARRESTING GEAR

Nomenclature	Part No.	NSN
Reducer (Hydraulic Pump)	A313319-3	4730-00-805-2081
Reducer (Hydraulic Pump)	A313319-2	4730-00-805-2082
Special Tap, .010, Oversize	407128-1 To 18	5136-00-808-9060
Spanner Wrench (SD)	408103-1	5120-00-826-3003
Saddle (Clamp Loop)	415303-1	5340-00-826-6752
Saddle	510127-1	5340-00-827-7454
Eye Bolt	A91477-11	5306-00-881-3014
Grit Blast Cabinet	610918-1	4940-00-906-0612
Wrench, CROV Seat	508532-1	5120-00-907-0034
Tube	321618-1	1720-00-909-4059
Torch Stem (Stag Horn) Assembly	413577-1	4940-00-911-3729
"Y" Connector	413578-1	4940-00-911-3731
Twisting Wrench	505610-4	5120-00-911-3732
Test Spacer (CROV Eng Hydro Test)	414473-1	5330-00-914-4769
Straightening Tube	319412-1	1710-00-078-9992
Wire Servicing Tool	505619-1	5120-00-978-9993
Twisting Wrench (7/8" Diameter Cable)	505610-3	5120-00-978-9997
Sheave Groove Cage	505978-1	5220-00-986-9090
Anchor Damper Wrench	423376-1	5120-01-024-8596
Textile 1 Cloth (8 x 18)	423575-1	1710-01-030-4137
Fastening Loop	423008-1	1710-01-031-6530
P/C Pendant (Parallel) For Engine Pull	422227-124-0	1710-01-072-7754
Alignment Pin	424221-1	5315-01-088-4420
Burner Assembly	520110-1	1710-01-164-9482
SID Buffer Assembly Tool	518864-1	1710-01-167-7467
Cleaning Solvent (55 Gal)	Grisolve MT-N	6850-01-202-4668
Nozzle 1/4 NPT (CROV)	314812-4	
Wire Support Gage	320632-1	
Fully Hardened Grit	322007-1	
Preservative Oil	323629-1	
Vent Valve Wrench	420451-1	
Alignment Pin	424221-2	5315-01-350-4799
Tempilstik, 400°F	426377-1	6685-01-280-3702
Tempilstik, 500°F	426377-2	6685-01-280-3703
Hose Assembly	20950-5	

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
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SPECIAL TOOLS AND MATERIALS

ARRESTING GEAR

Nomenclature	Part No.	NSN
Hose Assembly	20950-5	
Tensioner Assembly	30488	
Pump Assembly	40103	
Positioning Fixture	316563-1	1710-00-608-6515
Driving Fixture	316566-1	1710-00-608-6518
Tempilstik, 600°F	426377-3	6685-01-280-9878
Adapter CROV (Torque)	503058-2	
Socket CROV (Torque)	503058-3	
Piston Removal Kit	504722-1	
Ultrasonic Degreaser	521566-1	4940-01-284-7726
Melting Furnace	521912-1	
Handle, For Torch Stem	521940-1	1710-01-279-8232
Acetylene Hoses	521941-1	4720-01-282-6373
Winch Assembly	616760-1	
Sheave Assembly	616772-1	
Kevlar Gloves	426636-1	
Hand Crank	92378-14	1710-00-590-8840
Wire Rope, Pouring Station	624052-1	
Cutter Assembly(Hot Top)	624897-1	
Wire Rope Cutter Assembly	624957-1	5130-01-299-2278
Cooler Tube Nest Track Assembly	608685-1	
Lug Weldment "C" Clamp	608685-9	
Lug Weldment "C" Clamp	608685-11	
Inst. Set 4 1/2", 6" Bow Dividers		6675-00-926-4360
Fitting	314812-1	4730-00-250-7902
Tool, Installing	EIMA-19335	
Grease Gun, Hand	MIL-G-3859	4930-00-250-8038
Wrench, Special	515209-2	5120-00-769-0687
Pin, Straight	515209-4	5315-00-003-3900
Rod, Straight	515209-5	5340-00-004-3011
Bar, Wrench	515209-6	5120-00-769-0686
Axle Puller Assembly	626135-1	
Clevis Pin Installation Tool	523289-1	
Slotted Pipe Assembly 8 Ft	523009-1	5340-01-327-0333
Slotted Pipe Assembly 10 Ft	523009-2	5340-01-327-0332

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
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SPECIAL TOOLS AND MATERIALS

ARRESTING GEAR

Nomenclature	Part No.	NSN
Cable Leader Assembly	523010-1	6150-01-324-1227
Cable Splice Plug	427209-1	5935-01-323-3546
Light Extension	G22518	6230-00-688-9997
Flashlight	MIL-F-3747	6230-00-295-2194
Mirror, Inspection	GA51A	5120-00-618-6902
Take-up Nut	E87885-123	
Grip	316562-2	5340-01-351-8546
Cap Nut	316504-2	
Expander	316565-2	
Repair Plug	316567-2	
Gasket	K87769-10	

MK 7 MOD 0 JET BLAST DEFLECTOR

Nomenclature	Part No.	NSN
Emergency Panel Support	517450-1	1720-01-271-8736
Tool Kit, Helical Coil	515152-1	5180-01-324-2513
Emergency Lowering Device	521888-1	1560-01-324-8665
Union Nut Wrench	A-A-2345	5120-00-277-6471
Union Nut Wrench	A-A-2345	5120-00-277-6470
Union Nut Wrenches 1/2", 1", 1 1/2", 2"		TYCOM PROVIDED

MAINTENANCE SUPPORT TOOL CONTROL CENTER
PRECISION TOOLS AND INSTRUMENTS

Nomenclature	Part No.	NSN
Audible/Feel, 3/4" Drive, 1200-4800 In	GGGWO686	5120-00-221-7945
Dial Indicator, 3/4" Drive, 0-600 Ft Lbs	A-A-2411	5120-00-221-7983
Dial Indicator, 3/8" Drive, 0-150 In Lbs		5120-00-220-6380
Dial Indicator, 3/4" Drive, 0-420 Ft Lbs	A-A-2411	5120-00-242-3263
Dial Indicator, 3/8" Drive, 0-50 Ft Lbs	A-A-2411	5120-00-242-3264
Audible/Feel, 3/4" Drive, 100-750 In Lbs	GGGWO686	5120-00-294-9505
Dial Indicator, 1" Drive, 0-1000 Ft Lbs	A-A-2411	5120-00-555-1521
Dial Indicator, 3/4" Drive, 0-350 Ft Lbs	A-A-2411	5120-00-555-1523
Dial Indicator, 1/2" Drive, 0-175 Ft Lbs	A-A-2411	5120-00-640-6364
Dial Indicator, 1/2" Drive, 0-250 Ft Lbs	A-A-2411	5120-00-640-6365
Audible/Feel, 3/4" Drive, 100-500 Ft Lbs	GGGWO686	5120-00-902-3550

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
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MICROMETERS

Nomenclature	Part No.	NSN
Inside, Vernier-Caliper Jaws 2-1"	GGG-C-105	5120-00-221-1918
Inside, Rod and Sleeve 2-12"	GGG-C-105	5120-00-221-1921
Outside, Solid Anvil 2-3"	GGG-C-105	5120-00-221-1945
Outside, Solid Anvil 5-6"	GGG-C-105	5120-00-221-1948
Outside, Solid Anvil 1-2"	GGG-C-105	5120-00-243-2933
Outside, Solid Anvil 4-5"	GGG-C-105	5120-00-255-7564
Inside, English Measure 8-36"	GGG-C-105	5120-00-293-1652
Outside, Solid Anvil 0-1"	GGG-C-105	5120-00-540-2973
Gage, Depth 12 Rods, 0-112" Range 2-1/2" Base	GGG-C-105	5120-00-826-5368

TENSIONMETER

Nomenclature	Part No.	NSN
Dial Indicator	315454-2	1710-00-594-1376

**Table G-16. ALRE SPECIAL TOOLS AND MATERIALS
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